City of Toronto
Department of Public Health

RIGHT-TO-KNOW LEGISLATION

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January, 1985

CONTENTS

	Page
EXECUTIVE SUMMARY	1
INTRODUCTION	7
THE CONSULTATION PROCESS	10
PART A	
Public Health Interest in the Right-to-Know	11
Public vs Agency Responsibilities	12
Public 'Protection'	13
Some Considerations on Confidentiality	14
Justifying a Request for Enabling Legislation	14
Public Health in the 1980's	16
PART B	
Section 1: Evidence of By-law Need	17
Section 2: Existing or Proposed Legislation	27
Section 3: Existing Administrations	37
Section 4: The Adequacy and Availability of Information on Chemical Health Hazards	49
Section 5: Information Provision and Education	71
Section 6: The United States Experience with Right-to-Know Legislation	75
Section 7: Alternatives to a Toronto Right-to-Know By-law	112

PART C

Appendices

1: Options for City of Toronto Right-to-Know By-law Provisions 120

2: Safety Associations in Ontario 124

3: Agencies Approached for Consultation 125

4: Industrial Associations and Companies Invited to Comment 127

5: Synopsis of Comments from Industrial Associations and Companies 128

6: Environmental and Occupational Health Groups .. 131

7: Synopsis of Comments from Environmental and Occupational Health Groups 132

8: Selected Synopsis of Contributed Comments from Municipal Services 135

9: Comments Offered by Labour Organizations and Groups 138

10: Synopsis of Responses from Federal Departments 139

11: Synopsis of Objections and Concerns Respecting a Toronto By-law on the Right-to-Know 143

EXECUTIVE SUMMARY

The Department has reviewed a number of existing and proposed means for increasing the access to information regarding potentially hazardous chemical products on behalf of workers, municipal officials and the community in general. It is as a result of this review that three options are suggested for the consideration of the Board of Health.

OPTION 1

This option involves a series of advocacy approaches to the following agencies:

Labour Canada
Transport Canada
Ontario Ministry of Labour
Ontario Ministry of Health
Ontario Ministry of the Environment

Each of these agencies is either currently working on measures directly affecting the access to information, or has the potential to increase the availability of information.

Labour Canada

- Labour Canada is developing the Workplace Hazardous Material Information System (WHMIS) together with industry, the Canadian Labour Congress, most occupational health and safety regulatory agencies, Health and Welfare Canada, Consumer and Corporate Affairs, Environment Canada, Transport Canada, and the Canadian Centre for Occupational Health and Safety (see Appendix 10, p. 140).

The objective is to develop a uniform national system for communicating information on potentially hazardous chemical products, and to have this system recommended to provincial labour departments across Canada for implementation.

The information requested by various individuals and groups who have appeared at the Board of Health with respect to workers' access to information is expected to be addressed in the WHMIS recommendations.

The report on this project is expected in the summer of 1985.

Transport Canada

- Transport Canada is working to complete the legislative material for the Transportation of Dangerous Goods Act to create a national system for the handling, classification and marking of hazardous materials in transit (see Appendix 10, p.141).

These regulations will be adopted and enforced by the Ministry of Transportation and Communications for Ontario when all the legal work has been completed. This is expected to be well underway by the end of 1985.

Ministry of Labour

- The Minister of Labour for Ontario is requested to review his Ministry's policies toward increasing workers' access to workplace hazard information (see Section 7.1).

Ministry of Health

- The Minister of Health for Ontario is requested to take a lead role toward working for greater access to information for public health agencies from the Ministers of Labour and the Environment.

Ministry of the Environment

- The Minister of the Environment is asked to designate all Medical Officers of Health in Ontario "Provincial Officers" under the Environmental Protection Act, all parts, to permit greater access to information (see Section 7.2). It is recognized that such information would be considered confidential to the Medical Officer of Health.

In addition to the above, the package would include scrutiny of private members' bills introduced for the purpose of increasing access to information in Ontario (see Section 7.3).

RECOMMENDATIONS RELATED TO OPTION 1:

1. That the City of Toronto not develop a hazardous substances disclosure by-law for Toronto, but that such an option be held in abeyance pending the work being undertaken at the federal and the provincial levels of government in the development of workplace materials information systems, and of comprehensive transportation control systems for dangerous goods.

2. That Labour Canada be commended, and encouraged, to continue its work on the Workplace Hazardous Materials Information System project with all haste, and to establish a system of comprehensive workplace information to apply across Canada as soon as possible.

3. That Transport Canada be commended, and encouraged, to continue its work in developing all the operating regulations pertaining to the Transportation of Dangerous Goods Act, and to publish these as law as soon as possible.

4. That the Minister of Labour for Ontario undertake a review of the Ministry's policies regarding the access to information available to the Ministry under the Occupational Health and Safety Act, to give workers adequate information regarding the materials with which they work. This information should include both the name and the potentially adverse health effects, where such are known or suspected in the opinion of the Occupational Health Service of the Ministry of Labour.

5. That the Minister of Health for Ontario be requested to utilize his good offices, and take a lead role on behalf of public health agencies in Ontario toward developing an increased freedom to substance information, both from the Ministries of Labour and the Environment.

6. That the Minister of Health make available the data base of the Canadian Centre for Occupational Health and Safety (Hamilton, Ontario) on an on-line basis to each Medical Officer of Health in Ontario in order that the responsibilities assigned to the health units can be effectively carried out in matters relating to the environment and the workplace.

7. That the Minister of the Environment be requested to designate all Medical Officers of Health in Ontario, and their relevant staff members to be "Provincial Officers" under the provisions of the Environmental Protection Act. Such designations to be for the purpose of environmental information collection, as required, by the Medical Officers of Health under all parts of the Act, and the regulations made thereunder.

8. That the City of Toronto monitor and, where appropriate, support private members' bills introduced into the Ontario Legislature for the purpose of increasing citizen access to accurate product and substance information.

OPTION 2

The second option is the development of a specific Toronto by-law intended to increase the access to information from Toronto workplaces and industrial operations. Several formats are suggested for such a by-law. A number of possible legal limitations are noted, however:

- the necessity for enabling legislation for such a by-law; and

- the right of the municipalities to release any information gathered under such a by-law.

The by-law could take several forms, among them the following:

Form A) A simple, mandatory industrial response to a published listing of chemicals and substances, recorded by the City of Toronto, and made available to the public upon request.

Form B) A simple, mandatory industrial response to a published listing of chemicals and substances, recorded by the City of Toronto, subject to on-site verification by municipal staff, and made available to the public upon request.

Form C) A mandatory industrial response to a published listing of chemicals and substances, collected and recorded on-site by municipal staff, and made available to the public upon request.

It may be reasonable to enact a municipal by-law, even if the enabling legislation for such a by-law is not granted, or if the by-law is subsequently struck down by the courts. The demonstration of such municipal concern with respect to access to information would be recognized by provincial and federal authorities as a message to act in the matter.

Depending upon the form of by-law selected, the following would have to be considered:

- more administrative and inspection staff may be required;

- more resources for toxicologial and technical expertise may be required;

- more educational resources might be required;

- more research work would be required at other government levels;

- a reliable source of accurate information would be required;

- laboratory testing facilities may be required;
- specific sampling powers may be required;
- a selection of the list of chemicals to be used would have to be reviewed.

It must be noted, however, that a number of cooperative federal and provincial developments, such as the Workplace Hazardous Materials Information System and the Transportation of Dangerous Goods Act are already underway. These are expected to have direct impact on many of these concerns regarding the right-to-know.

The implication of such a by-law on the plans for future industrial development should also be reviewed in conjunction with the City of Toronto Commissioner of Planning and Development.

OPTION 3

This option is the enactment of a statutory by-law by the Provincial Legislature under the Health Protection and Promotion Act. Enforcement could then be carried out by the respective Medical Officers of Health in each health agency in Ontario in the same manner as Schedule 'B' of the former Public Health Act, which is now enforced as a regulation under the Health Protection and Promotion Act.

Such as statutory by-law could be amended by the local municipality, with the Minister's approval, and thereby made more specific to local concerns if necessary.

This alternative would require the active participation of the Ministry of Health for Ontario, and would involve an advocacy initiative by City Council. Given that this approach would have active provincial participation, it is not unreasonable that the expenses in carrying out the provisions would be considered appropriate for cost-sharing.

For Options 2 and 3 in particular, it is pointed out that the definition of "to know" must be clear if some form of by-law is to be created.

If the simple provision of the substance name is desired, the resources required would be relatively few. However, if the intent is to provide health and safety information respecting these substances on behalf of the collecting agency, far greater resource allocation would be necessary.

Each option potentially will increase access to information. The differences are in the amount of involvement of the Department of Public Health. It will be readily appreciated that assuming a major municipal role is more costly than motivating other levels of government to act. However, it is the most direct statement of municipal concern regarding hazardous substances. The difficulty in this route is that the municipal administration may well have to request enabling legislation to create a right-to-know by-law.

In support of the advocacy position for others to act, there is good evidence of an active role being played by the federal government through the WHMIS project and the Transportation of Dangerous Goods Act. These are the necessary bases for a proper and comprehensive national system of material identification and control. Duplication would be costly and ineffective.

We anticipate that deputations to be made to the Board will be most helpful in guiding the decision of the Board, and of City Council in this matter.

INTRODUCTION

In his report entitled "The Right to Know Hazardous Substances in the Community and the Workplace: The Municipal Role" (June 1983), Mr. John Jackson suggested the following objectives for the concept of the right-to-know:

> "People should have the right-to-know which hazardous substances they may encounter in their workplaces and in their communities. Fulfillment of this right requires:
>
> - knowledge of which hazardous substances are used, stored and produced in each factory, warehouse and commercial operation in the community.
>
> - knowledge of which hazardous substances are emitted from each enterprise into the air, water and land;
>
> - knowledge of which hazardous substances are transported through the community; and
>
> knowledge prior to the substance being used, stored, produced, emitted or transported.
>
> "Adequate public availability of this knowledge requires:
>
> - a listing of all hazardous substances both within the specific workplace and at some central location or locations within the community. This listing should include trade names, chemical names of all substances in the item, handling precautions, possible hazards and results of tests on the substance.
>
> - labels clearly visible on all containers holding hazardous substances within the workplace and on transportation vehicles. These labels should include the chemical name, handling precautions and possible hazards." (p. 2).

Mr. Jackson continued with a number of recommendations to the Local Board of Health which he stated were necessary to establish the legal framework wherein the right-to-know must exist. He recommended:

> "1. The City of Toronto should lobby the Minister of Municipal Affairs and Housing to proceed with discussion on and passage

of the Municipal Licensing Act. It should encourage other municipalities to lobby the Minister on this Bill.

"2. If it cannot obtain passage of the Municipal Licensing Act, the City of Toronto should ask the provincial government for special legislation enabling the City to pass by-laws requiring disclosure of hazardous substances.

"3. The City of Toronto should pass a Hazardous Substances Disclosure By-law to gather and make public information on hazardous substances stored, used, processed, produced or disposed of in Toronto.

"4. The City of Toronto should develop guidelines describing how information gathered through the Hazardous Substances Disclosure By-Law will be made available to the public.

"5. The Department of Public Health should develop a programme to gather, update and disseminate information on hazardous substances.

"6. The City of Toronto should urge the provincial government to:

a) gather and distribute information on hazardous substances transported by road in the municipality, and

b) extend the scope of and refine the existing waybill system and make the information thus gathered publicly available showing wastes generated by specific companies.

"7. The City of Toronto should urge the federal government to gather and distribute information on hazardous substances transported by rail in the municipality.

"8. The City of Toronto should urge the federal and provincial governments to implement placarding requirements for transportation vehicles carrying hazardous substances as soon as possible.

"9. The City of Toronto should urge the federal and provincial governments to develop and implement requirements for labelling containers of

industrial chemicals.

"10. The City of Toronto should encourage other municipalities to pass hazardous substances disclosure by-laws.

"11. The City of Toronto should work through the Association of Municipalities of Ontario, the Association of Ontario Boards of Health and the Canadian Federation of Mayors and Municipalities to urge the provincial and federal governments to develop the right-to-know."

Mr. Jackson continued, explaining why he recommended that the municipality of the City of Toronto should ask for legislative authority to produce the by-law instead of the Province of Ontario. He suggests:

> "Ideally, right-to-know legislation should be passed at a level of government that would ensure this right across a wide geographic area. One reason for this is that everyone should have this basic right regardless of where they live. Another reason is that enforcement of certain aspects of right-to-know at the local level is not practical. For example, requiring placarding of trucks in the City of Toronto different from that in North York would create substantial awkwardness.
>
> "The ultimate goal, therefore, should be passage of right-to-know legislation at the federal and provincial levels. Such passage, however, is unlikely to happen in the shortrun. The more realistic goal at this point is to pass some aspects of the right-to-know at the municipal level. This could immediately result in a significant increase in access to some important information. The City of Toronto's example is likely to be followed by other municipalities. This would create a momentum that would increase the likelihood of achieving the ultimate goal; right-to-know legislation at the federal and provincial levels" (p. 5).

The Local Board of Health (October 11, 1983) requested that the Medical Officer of Health report to the Board about disclosure, particularly as it relates to the City of Toronto. Mr. Jackson's suggestions are intended to give access to all information gathered under such a by-law to employees, the community at large and to municipal officials. It is recognized in the following review that these categories are overlapping, and they are used primarily for discussion purposes.

THE CONSULTATION PROCESS

The Medical Officer of Health undertook an extensive consultation process in order to obtain as much information as possible regarding the need for a right-to-know by-law, and to examine the administration of such legislation.

We consulted several City of Toronto and Metropolitan Toronto Departments, Ministries of the Ontario Government, and federal government departments (see Appendix 3). In addition to these agencies, most of whom have some legal responsibility in areas which could be related to the proposed municipal legislation, a number of industries and industrial associations were invited to comment upon the consultant's report to the Board (see Appendix 4).

Comment on the proposed by-law was also invited from a number of environmental and community groups, and major labour organizations (see Appendix 6). A summary of the views expressed by these various contacts can be found in the appropriate appendices at the end of this report.

The authors wish to acknowledge the assistance given by a large number of people and agencies in preparing this review.

We have attempted to retain accurately the character of the response, and we hope that the conclusions and opinions of others can be clearly distinguished. The opinions expressed in the report, except where directly attributed to others, are those of the Department of Public Health.

The report is divided into three main parts, A, B and C.

Part A deals with the principles which must be considered in preparing a by-law. The reasons, the limitations and potential benefits are explored.

Part B is divided into seven sections which deal with those areas to be considered before deciding whether or not to approach the Legislature for enabling legislation.

Part C is the collected Appendices pertaining to the review.

PART A

PUBLIC HEALTH INTEREST IN THE RIGHT-TO-KNOW

GENERAL OVERVIEW

The public health interest in public access to information on situations which are hazardous to health and safety, is related to the preventive approach in current public health thinking. Public health professionals believe that it is easier and less expensive to the individual and to society to avoid, or at least control, as many potentially harmful circumstances as possible. This preventive approach, while still depending upon a solid base of effective surveillance by the various levels of government, would be greatly advanced by the personal knowledge and caution of individuals.

It is reasonable to presume that people who are knowledgeable about hazards are more able to act prudently, and it follows that the more comprehensive their knowledge, the greater will be their ability to make health and safety decisions. There are, however, practical limitations to this concept.

It is only useful to have the specific name of a chemical or substance when one has good and credible access to information regarding its health effects. Without such a reference source, the protective aspect of such knowledge is very limited, and may be a greater source of misinformation than benefit. While it is true that a body of toxicological knowledge already does exist, there is a great deal yet to be learned regarding the long-term exposure effects of many substances in the workplace and in the environment (see Section 4). Appropriate answers to specific questions simply may not be available to employers or their workers, and public health personnel are finding it increasingly difficult to use the concept of 'safe' for anything or any substance.

Instead, what is being presented more and more as an alternative to 'safe' is the concept of risk assessment. Simply put, this is a system to determine the degree of risk involved from exposure to specific substances and setting standards based on the assessment of risk.

This approach will require increased public participation in the decision-making process. In order to make such a process meaningful, there must be information available on the health effects of specific chemicals and substances, and on their whereabouts. An example of this new process in requesting public participation is the recent announcement by the Ministry of the Environment that their new dioxin and difuran environmental standards will be determined following a public review.

PUBLIC vs AGENCY RESPONSIBILITIES

Whether this acknowledgment of the limitations in public health to determine 'danger' would jade the public, who daily suffer more 'concerns' expressed in the media; or whether it would encourage them to greater participation in the decision-making process as discussed above, is, as yet, not established. The public health intention would obviously be lost if the public were to feel defeated by the weight of the responsibility in such participation, or to feel that the whole question of standard setting is futile, or that it is exclusively the business of the government to look after their health.

It is possible, and indeed likely, that the public would continue to expect the existing bureaucracies to be responsible for these situations of the scientific unknowns, thereby simply duplicating or continuing the existing bureaucratic structures. However, with an expanded access to information the public would have the benefit of more information available in general, and could then, presumably, be an active and informed participant in establishing the risk levels they expect government agencies to administer on their behalf.

In the brief review of the existing legislation (see Section 2), and of the existing administrative machinery (see Section 3), the potential for positive change in the availability of information in the possession of Ministries of the Ontario Government is apparent. Whether these actually can be modified or augmented to achieve the desired public information, is one of the important determinations to be made by Council. A number of alternatives are looked at in Section 7. Each of these has two elements in common: they are provincial in their application, and they keep to a minimum the bureaucratic structures.

These are suggestions intended to achieve the broad coverage desired by public health professionals; and would be in keeping with the Jackson report. A request for a provincial lead has not yet been made, and should be explored as soon as possible.

PUBLIC 'PROTECTION'

As already indicated above, if the public has the right-to-know the hazardous ingredients being handled or stored in each premises as it might be defined in the suggested by-law proposal, it is open to question how they would prepare to 'protect' themselves from the perceived danger. Jackson suggests that:

> "The public also needs access to the information. People residing in a community should know the kinds of hazardous substances nearby so they can take action to protect themselves and their neighbourhoods" (p. 2).

a) General Considerations

Clearly, this statement focusses critical attention on the public's view of the existing state of knowledge regarding hazardous substances and their health effects, and in the public's trust in the willingness, the credibility and the honour of their government services to apply such existing knowledge to the daily circumstances of life.

One can speculate that, besides attempting to ensure that the agency charged with monitoring the identified hazardous conditions is doing its work, a reaction might be to make efforts to move the industry away from its original neighbours, and quite possibly out of the municipality altogether. This may be the case whether or not the materials are properly handled.

b) Purposeful or Unintentional Non-Compliance

One sad difficulty inherent in all legislation of such a protective intention is that disasters can only be reduced in number, but not eliminated. The recent tragedy (December 27, 1983) in Buffalo, New York, which cost the lives of 5 firemen is a sobering case in point. Illegally stored propane in a warehouse exploded, killing the firemen. Notwithstanding the apparent illegality, the tanks were present, either through willful intent, or because of human error. This terrible event and others like it underline the limitations of legislation, from a health and a safety perspective.

c) Security Concerns

There must be consideration that general knowledge of the whereabouts of hazardous materials could be misused. This could be for malevolent or cause-directed motivation. This security concern was expressed by a number of agencies, among them the Toronto Department of Public Works, Fire Department, Metro Roads and Traffic, Planning Department and the Ministry of Health.

SOME CONSIDERATIONS ON CONFIDENTIALITY

Confidentiality requires serious examination, particularly whether any premises or businesses should be granted the right to keep their ingredients of work secret; and if so, which ones should be granted such a right.

Furthermore, should a by-law be drafted for Council, there are two questions which must be addressed:

a) the authority of the municipality to require certain information to be provided on hazardous substances; and

b) the legal right of the municipality to release the information so obtained to other parties, or to the public at large.

There is doubt whether the power to license, regulate or govern any business carried on in the municipality as was proposed by the now-withdrawn Bill 11 (Municipal Licensing Act) would have included the power to require information on substances handled by business.

Further, even if the City could legally licence businesses, and require as a condition of licencing, the provision of such information, it may be incorrect to presume that the City could disclose such information to the general public.

JUSTIFYING A REQUEST FOR ENABLING LEGISLATION

The Local Board of Health requested the Medical Officer of Health to explore the legislative possibilities for the development of a municipal right-to-know by-law for the City of Toronto. In seeking to address this matter a number of issues must be examined.

Several possible Toronto by-laws are sketched out in Appendix 1. Specifics such as the minimum quantities to be reported, exemptions to the by-law, levels of the fines, alternative

punishments for non-compliance, hazard definition and the premises to which the by-law would apply are only tangentially considered in this paper. These would be worked out in detail on receipt of enabling legislation from Cabinet.

The enabling legislation for such a by-law would require approval of the Provincial Cabinet. A number of Ministries, both federal and provincial, have specific responsibilities in the same or related areas of concern. We think the request for enabling legislation should cover the following points:

1) that there is a need for a by-law;

2) that there is lack of adequate existing legislation to deal with the demonstrated problem;

3) that the administration of existing legislation is inadequate, or ineffective;

4) that adequate information exists regarding the hazards specific to the substances, chemicals or products of concern to make the protective intent of the by-law effective;

5) that the distributor/user held responsible under the suggested by-law has realistic access to the information on all ingredients and products to permit proper compliance with such a by-law;

6) that the municipal right-to-know legislation passed in the United States has proven to be an administrative success, and that it has been demonstrated to have made a significant contribution to occupational health, particularly through prevention programs;

7) that alternatives to the passage of municipal right-to-know legislation have been examined, and found to be inadequate; and

8) that the municipal resources available to carry out the projected provisions of such a by-law are adequate; or that they could be made adequate, and the costs pertaining to such assumption of responsibility (see Appendix 1).

The answers to these questions would be necessary for City Council to be able to decide whether or not to approach the Province for enabling powers.

PUBLIC HEALTH IN THE 1980's

In addition to the above considerations, there is an important caution delivered to the Board of Health and the Medical Officer of Health in Public Health in the 1980's.

This document has acted as the guiding principle of the new Departmental approach to public health concerns. It is perhaps appropriate to carefully review the goals contained in the report, and to examine their relevance to the question of the municipal right-to-know legislation question, particularly in respect of the role of the Medical Officer of Health.

The goals set forth in Public Health in the 1980's are as follows:

"1. Our primary goal has been to establish a public health system which is self-regulating and responsive to continuing change.

"2. A second major goal is to build a Department which can resist the pressure to be all things to all people. This means reducing the Department's propensity to assume responsibility for all health-related problems which other agencies can't or won't handle. Roles proper to public health must be defined by policy, not through expediency." (p. 36-37).

The Department must guard against the tendency to accept additional responsibility merely because others fail to do so. This warning is based largely upon a realistic view of the resource allocations necessary to carry out those duties we have already accepted. Advocacy for a proper solution to the identified problems may be more appropriate.

PART B

In Part A, we indicated the topics which should be addressed in order to justify a request for further action. In this section we consider these in detail.

SECTION 1: EVIDENCE OF BY-LAW NEED

The evidence presented regarding need is based upon submissions from the following groups or agencies:

1.1 Fire Department
1.2 Department of Public Health
1.3 Unions and Other Labour Groups
1.4 Environmental Groups

1.1 FIRE DEPARTMENT

The Toronto Fire Department indicated that, for their purposes, they were not aware of any circumstances presenting an imminent danger which could not be dealt with effectively through their existing information-gathering methods.

1.2 DEPARTMENT OF PUBLIC HEALTH

This example illustrates a circumstance where access to information on hazardous substances and chemicals by the Medical Officer of Health would have been very desirable.

The Medical Officer of Health recently conducted a study of residents of the Junction Triangle area in comparison with several other selected areas in the City. As part of the study, the Medical Officer of Health had asked both the Minister of the Environment and the Minister of Labour to share the information they may have had at that time (April 1983) regarding the chemicals and substances used or stored in the factories and plants in the area. He received a firm refusal from both Ministers because of their confidentiality clauses, even though both were in support of the study being conducted, and had, in fact, contributed financially to the work. Routine monitoring data, however, were provided by the Ministry of the Environment.

In this particular instance, the Medical Officer of Health could consider only part of the information he felt was required in order to analyse the relationship between possible chemical or substance exposure, and the illnesses which may have been demonstrated in the study.

It must be acknowledged, however, that since proclamation of the Health Protection and Promotion Act, the Ministry of Labour has undertaken a chemical and toxic substance survey at the request of the Medical Officer of Health. This would indicate an increased potential for future cooperation. Such information sharing must be encouraged and developed between agencies to avoid unnecessary and costly duplications of effort.

1.3 UNIONS AND OTHER LABOUR GROUPS

1.3.1 Canadian Union of Public Employees (National Office)

During an audit for old chemicals in a Toronto Board of Education school (1982 or 1983) a large quantity of chemicals and substances were found in the basement. The quantity of this material and its nature was such that it was necessary to call out the bomb squad for safe disposal.

Routine audits and a right-to-know would have prevented such an accumulation from occurring in the first place, thus eliminating a potential hazard to both the health and safety of students and staff in the school.

1.3.2 Canadian Union of Public Employees (Ontario Division)

The following examples were submitted by CUPE as evidence from the Metro Area of the need for a municipal right-to-know by-law:

> "Schools:
>
> In one incident a custodian left a cap off a 45 gallon drum containing cleaning fluid. It was stored in a small room, about 8' x 8', with general ventilation. The following morning, when the custodian opened the door to the room, the fumes were very strong. In addition to his eyes watering, the paint on the walls had blistered and could easily be peeled off.
>
> The cleaning drum in question had a name band but no warning or label to say what was in the

cleaning fluid. This cleaning fluid is used on a day-to-day basis.

"Libraries:

There is a greater demand by the public for the use of photocopying machines. Larger machines are being installed in the libraries and the library worker has to maintain the basic functions of these machines as well as use them.

Our concerns - What is in the chemical used in the photocopying machines, and the ray coming from the machines?

At present, in North York Library, this is being asked by CUPE Local 771 because one of their member's primary jobs was to use the photocopying machine and this worker has developed breast cancer.

"Hospitals:

It has been proved that nurses working in and around the operating room have a higher risk of birth defects in their infants and also of cancer.

Also, the Ministry of Labour's Occupational Health and Safety Department is presently in the final stages of completing a report on Ethylene Oxide. In the survey, done February and March 1984, it was found that not only the workers, but most of management did not know what they were working with.

In Toronto most hospitals use Ethylene Oxide on a daily basis and the workers involved vary from two to over twenty."

1.4 ENVIRONMENTAL GROUPS (see also Appendix 7)

1.4.1 Energy Probe

If the residents of the area adjacent to the Canadian General Electric plant on Lansdowne Avenue in Toronto had had the right-to-know, as proposed by the by-law suggestion, they would have had the opportunity to be able to take whatever action they felt to be necessary (i.e., agency review, field monitoring, health checks, etc.). Thus, they could have reduced the potential harm which may have resulted from the PCBs and the radioactive materials kept on the site.

Such surveillance has been undertaken by a citizens' group in Port Hope, Ontario, over their concerns with the Eldorado Nuclear plant in that municipality.

1.4.2 Ontario Public Interest Research Group (OPIRG)

The OPIRG presented two suggested situations with which to illustrate the need for a right-to-know by-law:

> "An individual becomes sick after eating at a restaurant. At first food poisoning is suspected but the symptoms are similar to those following moderate exposure to Dursban, a pesticide. The restaurant is sprayed at night to control cockroaches. There is no notification in the restaurant that hazardous materials are used in the establishment."
>
> "An individual is poisoned by the apartment in which she lives. She is unable to find out what chemicals have been used in the wood, paint, and plastics in order that she be able to avoid these chemicals in future residences. There is no obligation on the part of the manufacturers to divulge what chemicals are used in the preparation of their product."

1.4.3 Toxics Coalition

The Coalition offered the following examples to demonstrate the need for a by-law. (Material presented as a deputation at the meeting of the Local Board of Health, October 11, 1983).

> "The fact that existing legislation is not enforced to the maximum degree possible means that even access to information which, in theory, is

guaranteed by law is not in fact available. An example is the request by CUPE, Local 207, made up of library workers in Sudbury, which had requested copies of reports prepared by the Ministry of Labour investigating asbestos contamination in the workplace. Despite repeated requests, these reports were not provided till eight months after the report had been prepared."

"In other cases employers have successfully resisted requests for information. The Canadian General Electric company lamp manufacturing plant located in Toronto successfully resisted requests for information concerning what seemed to be a higher than normal cancer rate among employees. It was not until political pressure was successfully brought to bear in September of 1982 that a company survey revealed a "higher than expected incidence rate of gynaecological and breast cancer" among the workers in the plant. Although this report had been completed eleven months previously it had not been provided to employees".

"Another danger of toxic substances in the community comes from manufacturing operations carried out in proximity to residential areas. An example is the Continuous Colour Coat manufacturing plant located in Rexdale. Local residents first complained of pollution problems connected with the plant in 1966 but it was not until ten years later, in 1976, that the Ministry of the Environment first imposed abatement procedures. These were then extended and were not made mandatory until 1979. What is particularly alarming, however, is the statement made by government officials at the time to the effect that they did not have access to information concerning the chemicals used in the plant."

"Perhaps the best known example is the Junction Triangle located in Toronto ... Surveys done by local residents have revealed a higher than average number of throat and eye irritations, allergies and respiratory diseases in the area. Tests carried out by the Ministry of the Environment showed higher than acceptable levels for all eighteen chemicals for which testing was done. After an employee of one Junction Triangle company, Nacan Limited, poured 800 gallons of Vinyl Acetate into the sewer system resulting in the temporary closure of three schools and the hospital treatment of three citizens, Mayor Art Eggleton created the Junction Triangle Action Task Force. In a report presented to City Council

on December 7, 1982 Mayor Eggleton revealed that two of the area companies, in response to Task Force requests, had provided lists of chemicals used in the plant to the Ministries of Labour and Environment. Four others - Glidden, Inmont, Nacan and Viceroy refused to do so in the absence of guarantees of confidentiality. At the present time the Province of Ontario and City of Toronto are conducting a joint study on the health of residents of the Junction Triangle area. Information concerning the toxic substances which threatens the health of those residents is still not available."

"Although not the primary focus of the brief, reference should be made to problems connected with transportation of hazardous substances through the community. This danger was graphically illustrated by the Mississauga derailment. It is clear that local residents should be provided with more information than is presently the case concerning hazardous substances carried through their community."

1.4.4 Riverdale Occupational Health Group

The following examples were provided to demonstrate the need for a by-law:

"One man in our group, while working as a machinist, used trichlorethylene (sic) as a solvent each day. At night, if he drank a beer, he broke into a red blotchy rash and he suffered from heart palpitations and a general weakness. It was only with considerable effort and research that he was able to determine that the solvent was responsible for these disconcerting symptoms. His employer never informed him, nor provided him with information as to these side-effects."

"A few years back, I worked in a non-unionized shop analysing transformer fluids. At an unventilated counter I conducted tests on 30 gallons of Askarel per day. I washed off the counters and cleaned my hands at the end of the day with carbon tetrachloride. Never was I informed that Askarel is a trade name for PCB's, a chemical that can cause fatty degeneration of the liver. Nor was I informed that carbon tetrachloride is a potent carcinogen. It is a volatile solvent that can be absorbed through the skin that is seldom used by industry today because of its proven toxicity."

"Another woman in our group worked at McGregor Hosiery Mills on Spadina. As a health and safety member she requested information on the chemicals used in the plant dye-house. When the company finally did provide information, it was in the form of data sheets, and these were supplied for only some of the chemicals used. Data sheets are produced by the manufacturers themselves and so provide scanty information in an attempt to protect "trade secrets". These data sheets fail to provide the chemical constituents of materials used, making it impossible for workers to discern what levels of exposures are safe. To complicate the situation, this dyehouse work process involves the mixing of chemicals to form compounds for which the hazards to health and safety are unknown."

"Only in the case of two of the many chemicals used, formaldehyde and hydrogen peroxide, could the Health and Safety Committee go on to investigate exposure levels. Government inspectors were called in for testing, and only after they were recalled to do an accurate study, was it discovered that the workers were being exposed to levels in excess of the recommended ceiling limits. Consequently the use of formaldehyde has been stopped at this factory. However for those workers who have been exposed to formaldehyde for years, the discovery may prove to be too late."

"Prior to the efforts of the Health and Safety Committee, none of this information, however sparse, had been available to the dye-house workers who combined chemicals daily using no safety equipment, under conditions of poor ventilation, and with no knowledge of fire hazards."

1.4.5 South Riverdale Community Health Centre

The Centre supported the following:

"... that the City of Toronto actively lobby both the provincial and federal governments for more stringent regulation of the transporting and labelling of all hazardous substances.

"Clearly this right of legislation is basic for community control over its health, and the environmental factors affecting the health of the people in the community. The proprietary rights of industry must be subordinate to the more fundamental

right of a community to a clean environment and the health of its members.

"Therefore, as the Medical Officer of Health in the City, we encourage you to pursue whatever avenues available in order to secure a right-to-know by-law that will ensure the health and safety of the citizens of Toronto."

1.4.6 Toronto Occupational Resource Committee

The Committee indicated support for a hazardous substance disclosure by-law, and offered the following as evidence of the need for such a by-law:

"... because of limitations of the Act itself, or because of inadequate enforcement, actual improvements in health and safety have fallen short of hopes and expectations.

"The difficulty workers experience in obtaining precise information regarding their exposure to hazardous substances is one of the most serious obstacles to achieving a safe and healthy workplace. If workers are to be able to make informed, responsible decisions concerning adequate controls of occupational hazards, they need comprehensive information regarding every hazardous substance they work with. This information must include precise chemical composition of substance used, physical characteristics, control measures, safety data, and all known or suspected health effects ...

"... Obtaining sufficient information regarding toxic substances is often difficult for workers who do not belong to committees, especially in workplaces where committees do not exist. This problem is compounded in non-unionized workplaces where workers may fear employer reprisals should they request information on hazardous substances ...

"... Such a by-law would be of particular benefit to the many Toronto workers employed in small, unorganized shops, where there is no health and safety committee to serve as a conduit for information, and where there is no union protection against employer intimidation of workers who press for such information. One benefit of a disclosure by-law would be that workers could have access to such information through the city's public health

department, and thus not need to go to their employer at all to obtain it.

"The protection of workers from occupational hazards has traditionally been the mandate of the provincial government. However, it seems clear that provincial or federal "right-to-know" legislation is far from imminent. Toronto now has the opportunity to break new ground in this area, in a manner that is very consistent with the mandate given municipalities by the new Health Protection and Promotion Act. By so doing, it is hoped that it will point the way for similar action on the part of other municipalities in Ontario. We therefore strongly urge the Board of Health to endorse the recommendations contained in the report on The Right-to-Know Hazardous Substances in the Community and Workplace."

DISCUSSION

A review of the examples presented by those respondents quoted above suggests that the information desired in each instance could have been made available, if:

a) the policy of the Ministry of Labour were more generous in responding to workers' requests;

b) the Ministry of the Environment were not bound by the Environmental Protection Act to confidentiality; and

c) the employers had ready access to information on the substances, and their potential hazards, which are in use in their respective workplaces.

This would suggest that the most direct route toward achieving the desired access to information on such substances would be:

- to encourage the Ministry of Labour to change its policy on releasing the information available to them in raw data form, including test results;

- to ask the Minister of the Environment to consider including the Medical Officer of Health in matters of information sharing under the Environmental Protection Act in its entirety; and

- creating greater awareness, on behalf of employers, of the services of the Canadian Centre for

Occupational Health and Safety (CCOHS) in Hamilton, or advertising the access to their data through the newly developed computer linkage with the CCOHS available to the Ministry of Labour.

Given the above comments, it must be carefully considered whether a by-law is the most effective approach to deal with the examples of dangers which the respondents describe.

SECTION 2: EXISTING or PROPOSED LEGISLATION

Currently, there are a number of legislative tools designed to address some of the dangers which may exist to workers, the community at large and to municipal service personnel. This synopsis is not intended to be an in-depth assessment, but rather is based on a general reading of the legislation, and discussion with the agencies responsible for enforcement.

2.1 THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1978 (Ontario)

2.1.1 General

The Occupational Health and Safety Act (OHSA) is premised on the idea that the responsibility for worker health and safety is an internal, self-solving and continuous program, dealt with most effectively by the employees and management directly involved on the worksite of concern. In order to facilitate a proper participation for workers in this process, certain information is required under the Act to be made available to the worker regarding the materials and the substances with which he/she works, or is exposed to in the workplace. A copy of the Occupational Health and Safety Act must be posted in both English and the majority language of the workplace (Section 14 - OHSA).

Worker health and safety representatives are required on construction projects where the number of workers regularly exceed 20 or where the Minister has so ordered. One of the responsibilities of these representatives is to identify situations that may be a source of danger or hazard to workers and they are to make their recommendations or report findings thereon to the employer, the workers and the trade union or trade unions representing the workers (Section 7(7) - OHSA).

Also under the Act (with certain exceptions), where twenty or more workers are regularly employed, where a regulation has been made in respect of a designated substance used in the workplace, or where an order has been made to an employer under section 20, the employer shall cause a joint health and safety committee to be established and maintained at the workplace. The committee has the power to identify situations that may be a source of danger or hazard to workers and to obtain information from the constructor or employer concerning the identification of potential or existing hazards, materials, processes or equipment. They may also recommend to the constructor or employer and the workers, monitoring programs, measures and procedures concerning the health and safety of workers (Section 8(2) - OHSA).

In respect to providing the necessary information resources to these committees and individuals, a Director of the Occupational Health and Safety Division is to ensure that persons and organizations concerned with the purposes of the Act are provided with information and advice pertaining to its administration and to the protection of occupational health and safety of workers (Section 9(3) - OHSA). At the establishment level in situations where employers, constructor and supervisors are not meeting their duties to provide information to workers, committees or worker representatives, inspectors of the Ministry when notified of the situation can issue orders for information to be provided in keeping with the requirements set out in the Act.

An employer is required to provide information, instruction and supervision to a worker to protect the health or safety of the worker, and to acquaint a worker or a person in authority over a worker with any hazard in the work, and in the handling, storage, use, disposal and transport of any article, device, equipment or biological chemical or physical agent (Section 14 - OHSA).

Additionally, where biological, chemical or physical agents are prescribed by regulation, the employer must accurately keep and maintain, and make available to the worker affected, records of the exposure of the worker to such agents; and he/she must monitor the workplace as required for those prescribed agents. These monitoring records for prescribed materials must also be posted in the workplace by the employer. Further, where required by regulation, the employer must notify the Ministry of Labour of the use of, or intended use of, a biological, chemical or physical agent. These duties under section 15 only come into effect when prescribed by regulation (Section 15 - OHSA).

Duties imposed on a supervisor are that he/she advise a worker of the existence of any potential or actual danger to the health or safety of the worker of which the supervisor is aware, and ensure that the worker is taking the appropriate precautions by wearing protective equipment as required by the employer, the Act or the regulations (Section 16 - OHSA).

Under Section 28 of the Act, the Ministry may investigate any situation in the workplace, either upon complaint, or for reasons of routine, and the Ministry may demand any information germane to the determination of hazard to the worker, including the ingredients of any process and their common or generic names, and the composition and the properties thereof. After the investigation of a complaint, it is the practice of the Ministry inspectorate to discuss the report with the employer, worker representative, and where there has been a complaint, the complainant. The report is left with the employer who is required to post it and any orders in a conspicuous spot in the workplace, in addition to giving copies to the joint health and safety committee. The complainant must also be provided with a

copy sent directly to him/her. The Act requires that trade secret information be kept confidential and not be disclosed.

The Act also places duties upon the worker to work in compliance with the Act and regulations, to use protective devices or clothing required to be used or worn by the employee, and to report contraventions or hazards to the employer. It is important to note that the employer may have more stringent requirements than the Act or regulations and these must be followed (Section 17 - OHSA).

2.1.2 Toxic Substances

Where a biological, chemical or physical agent is used or intended to be used in a workplace, and its presence in the workplace or the manner of its use is, in the opinion of the Director, likely to endanger a worker's health, the Director may take a number of steps including prohibition of the substance, or the ordering of how it is to be used in the workplace. Before any such order is made the Director must consider the factors set out in Subsection 20(8). A copy of such order is also provided to the health and safety representative, health and safety committee or union involved, as well as being posted in a conspicuous location in the workplace. It should be noted that the order in this case identifies the biological, chemical or physical agent which is the subject of the order (Section 20 - OHSA).

Under Section 21 of the Act, companies are required to notify the Ministry of Labour of new agents brought into Ontario workplaces. According to the working definition of a new agent contained in the Act, it is one that is neither on the U.S. Toxic Substance Control Act Inventory (TSCI), nor in use in Ontario prior to October 1, 1979. The TSCI has been adopted as the base line inventory for Ontario. Once a notification has been received by the Ministry it is reviewed by a toxicologist of the Occupational Health Branch and where necessary, further information to determine the potential hazards of the agent may be required of the manufacturer, distributor or supplier. The Ministry procedures concerning the review of these notifications provides for mechanisms to protect worker's health while maintaining the confidentiality of trade secrets and secret manufacturing processes. When it is determined from the data provided that a hazard to the health and safety of workers may exist, a field visit is made. The Director has authority under section 20 of the Act to prohibit, limit, restrict or control agents which are likely to be a hazard to the health and safety of workers.

The nine Designated Substance Regulations (lead, mercury, coke oven emissions, vinyl chloride, asbestos, silica, isocyanates, benzene and acrylonitrile) require employers to determine whether

such substances are used and workers are potentially exposed. In such cases, the employer must do an assessment of the potential exposure in that workplace in consultation with the joint health and safety committee. Where there is a potential hazard to workers' health, a control program must be developed in consultation with the committee.

There are also provisions in the regulations for industrial establishments, construction projects and mines and mining plants which require control of toxic substances. For example, Section 134 of the Regulations for Industrial Establishments requires that workers who may be exposed to biological, chemical or physical agents that may endanger their safety or health, are trained in the precautions and procedures to be followed in the handling, use and storage of the agents; the proper use and care of required personal protective equipment; and proper use of emergency measures and procedures.

It shall also be noted that Section 47 of the Regulations for Construction Projects sets out requirements for the labelling of containers for combustible, corrosive or toxic substances. They are to be labelled to identify the substance, the hazards involved in the use of the substance, the uses to which the substance shall not be put and the precautions to be taken in the handling, use and storage and disposal of the substance.

2.1.3 Confidentiality

Section 34 of the Occupational Health and Safety Act contains provisions regarding the confidentiality of information. Except for the purposes of the Act and regulations or as required by law, information collected under the Act is confidential. Section 34 makes specific reference to the non-disclosure of secret manufacturing processes or trade secrets acquired, furnished, obtained, made or received under the provisions of the Act or regulations. Section 34(3) allows a Director discretion to reveal otherwise confidential information. This discretion is directed only to information that would otherwise be confidential as per section 34(1)(a) and does not confer discretion with regard to trade secrets or secret processes.

2.1.4 Limitations

As will have been noted, the limitations of the Occupational Health and Safety Act, with respect to the right-to-know are as follows:

a) there is no requirement for the employer to tell the worker the actual name of the substances, but only of the hazards which may be associated with their

use; and

b) there is no requirement to notify the Ministry of the use of any biological or chemical agent or combination of agents which are not defined as new in section 21 of the Act.

In addition, it is left to Ministerial discretion as to what information, available to the Ministry, will be released to other persons or agencies. However, it should be noted that the Ministry gives reports of inspections or investigations to the employers to post and to give to the joint health and safety committees. Where the Ministry has identified a problem across any industrial group, a Hazard Alert Sheet is prepared and distributed to those affected to advise them of this health or safety danger. These reports would not, however, include trade secrets or secret manufacturing processes.

There is also a noticeable lack of reference to those services available to the employee to help him/her determine which hazards exist for each substance in the workplace. However, it should be recognized that under the WHMIS proposals being currently discussed, such hazard determination problems should be adequately addressed.

2.2 HEALTH PROTECTION AND PROMOTION ACT (ONTARIO)

2.2.1 General

Under this Act, there are references to conditions which deal with both the environment and with occupational situations. The legislation provides for the Medical Officer of Health to receive complaints in either area of concern, and then, in concert with the respective Ministry involved, investigate the complaint. This is clearly not intended as an infringement on the power of the Ministries, given that the Act makes it very clear that the respective Ministries need only give to the Medical Officer of Health such information in their possession as they are not prohibited from disclosing. (See the previous comments on confidentiality under the Occupational Health and Safety Act, 2.1.3).

NOTE: There is a tripartite ministerial committee currently examining how best to make these provisions effective in operation, to ensure no misunderstandings occur in their application in practice.

The Act contains a provision (Section 16) specific to food premises, requiring the operator to reveal whatever information is requested or required by the Medical Officer of Health, but

this is of little relevance in the context of the right-to-know question being examined in this paper.

2.2.2 Confidentiality

In addition, as noted in the comments on the Health Protection and Promotion Act, there is a long-standing presumption of confidentiality of all information obtained by the Medical Officer of Health under the Act, and it would be quite beyond traditional understandings of responsibility to reveal such information to the public.

Confidentiality is made more explicit in Section 38 regarding the communicable disease information obtained under the Act by the Medical Officer of Health.

2.3 THE ENVIRONMENTAL PROTECTION ACT (ONTARIO)

2.3.1 General

The right of the Ministry of the Environment to obtain required information is enshrined in the Environmental Protection Act, Section 127, where the Provincial Officer may enter upon any premises to carry out the provisions of the Act. Further, Subsection 3 notes that:

> "Every person responsible for a source of contaminant shall furnish such information as a provincial officer requires for the purposes of this Act or the regulations."

For the purpose of the Act, Section 1(n) defines a Provincial Officer as

> "...a person who is designated by the Minister as a provincial officer for the purposes of this Act and the regulations."

2.3.2 Confidentiality

Under this Act, there is again a very stringent confidentiality clause which puts severe restrictions on the Ministry of the Environment regarding the revealing of any information which may be obtained under the provisions of the Environmental Protection Act (Section 130). However, notwithstanding this confidentiality, "information in respect of the deposit, addition, emission or discharge of a contaminant into the national environment" may be released under that section.

Information provided to the Ministry in support of an application for approval, under the Environmental Protection Act, is normally handled as public information although some may be provided as proprietary information and may be kept confidential if there does not appear to be any overriding public interest requiring its disclosure.

2.4 ENVIRONMENTAL ASSESSMENT ACT (ONTARIO)

2.4.1 General

Under this Act the conditions are similar to those under the Environmental Protection Act, both in respect of the comprehensive powers for inspection, and in the strict confidentiality clauses. Given that the purpose of the legislation is similar, such resemblance is understandable.

2.4.2 Ministerial Discretion

There is considerable provision for Ministerial discretion, allowing the Minister to exempt projects from such requirements of the Act as he/she may feel necessary. In effect, this permits the waiving of environmental assessments, thus limiting the public access to various information factors.

2.4.3 Confidentiality

As noted above, there are very strict confidentiality provisions in this Act, and it is unlikely that the intentions of the public disclosure being sought would be easily available under the Act without a major legislative change.

2.4.4 Provincial Officers

Provincial officers may also be appointed under the Act for the purposes of the Act and these are, of course, bound by the confidentiality limitations, including not being subject to the giving of evidence obtained under the Act in civil litigation.

2.5 DANGEROUS GOODS TRANSPORTATION ACT, 1981 (ONTARIO)

2.5.1 General

The following is quoted from material supplied to Dr. A.S. Macpherson, Medical Officer of Health by the Honourable James Snow, Minister of Transportation and Communications (letter dated 9/5/84):

> "Background of Dangerous Goods Legislation
>
> "The Federal Transportation of Dangerous Goods Act, 1980 was given Royal Assent 17 July, 1980. In March 1984 Parts X and XII of the regulations dealing with Protective Direction and Appeals passed through Privy Council Office, were published in the Canada Gazette, Part II and are now in force. The remainder of the regulations are in varying stages of finalization and publication.
>
> "The purpose of the Federal Act is to promote public safety in the transportation of dangerous goods. It covers the "handling", "offering for transportation" and the "transportation of" dangerous goods for all modes of transport; air, rail, marine and road. The Regulations provide for an internationally acknowledged system of classification and identification of dangerous goods. This United Nations System categorizes products into one of nine different classifications and identifies each product with the use of a four digit product identification number.
>
> "Following promulgation of the federal legislation, ... it is intended there will be a six to twelve month grace period for education purposes.
>
> "The Ontario Dangerous Goods Transportation Act, 1981 received third reading 18 December, 1981 and will be proclaimed at a date yet to be named. It is proposed to adopt the Federal Regulations for the on-highway mode which will provide control over the "transportation of" dangerous goods only. The Ontario Act, because it will utilize the Federal regulations will not come into force before they (i.e., the federal ones) are in place."

2.6 TRANSPORTATION OF DANGEROUS GOODS ACT (CANADA)

2.6.1 General

The Regulations under the Transportation of Dangerous Goods Act are intended to provide a single harmonized set of safety standards, safety marks and safety requirements that will be applied throughout the country to all modes of transport and to all activities including those in the pre- and post-transport phases of the commercial cycle which can contribute to safety in the transportation of dangerous goods. These Regulations will replace or partially replace a number of existing federal Regulations respecting transportation of dangerous goods including those under the Aeronautics Act, the Canada Shipping Act, the Explosives Act and the Railways Act as well as, through administrative agreement with the provincial governments, certain Regulations of the provinces. In many provinces, though, the requirements of these Regulations will be applied by new provincial legislation respecting the transportation of dangerous goods recently enacted and designed to parallel and complement the federal Transportation of Dangerous Goods Act.

This key piece of federal legislation is being guided by Transport Canada, and will ensure that cross-Canada trade is uniformly handled for public protection through a nation-wide system of requirements.

2.6.2 Application

The Act is very broad in its application. It applies to all handling, offering for transport and transporting of dangerous goods, by any means of transport, whether or not for hire or reward and whether or not the goods originate from or are destined for any place or places in Canada. Further, it applies to all transporting of dangerous goods by ships, vessels and aircraft registered in Canada, whether in or outside Canada.

There are, however, limitations, such as those items under the control of the Minister of National Defence and certain other specified conditions.

2.6.3 Inspection Powers

There are broad inspection powers to be included in the Act. Inspectors will be able to enter and inspect any building or place where they believe, on reasonable and probable grounds, that dangerous goods are being handled or stored. Further, they will be able to take samples of anything and make copies and extracts of any documentation, and they will be able to seize and

remove any materials deemed to be able to cause a danger, or which appear contrary to the legal provisions.

2.6.4 Information Gathering

The Minister will have very broad power to request and obtain information under the Act, but this is held in confidence and cannot be asked for in any legal proceedings other than under the Act. However, the confidentiality does not apply to the extent that it relates only to the dangerous properties of any product, substance or organism without revealing the formula, composition or chemical ingredients thereof; or to the extent that it is required to be disclosed or communicated for the purposes of an emergency involving the health or safety of any person or the public in general.

2.7 PRIVACY AND ACCESS TO INFORMATION ACT, 1984 - BILL 80 (ONTARIO)

2.7.1 General

This legislation, as proposed, would appear to be somewhat less than complete in its ability to make the information on products and materials available to those parties requesting it. In addition to the limitations placed upon the general availability through the discretion of the various Ministries, Section 2 (1) notes:

> "This Act is subject to any provision in any other Act providing for confidentiality of or access to information or records, except that where such confidentiality or access is subject to a discretion that is not subject to specific criteria, the discretion shall be exercised in accordance with the provisions of this Act."

It would seem therefore, that hazardous substance materials disclosure from government sources would still require the establishment of specific policies within the relevant Ministries which made it clear that the desired information would be released. Unfortunately, such a process would seem somewhat redundant, and really should form part of Bill 80 itself.

SECTION 3: EXISTING ADMINISTRATIONS

3.1 MINISTRY OF LABOUR

3.1.1 Ministry of Labour -- Workload and Resources

The Ministry of Labour provides the application and enforcement services required by the Occupational Health and Safety Act for all workplaces in Ontario which come under the Act. For the City of Toronto, the Industrial Health and Safety Branch files indicate approximately 138,600 production employees and 180,400 administration employees, for a total of 319,000. The Occupational Health and Safety Act does not apply to work performed by the owner or occupant or servant of the owner or occupant in a private residence, to farming operations unless prescribed or to workers covered by the Canada Labour Code, Part Four or the Atomic Energy Control Act.

In Toronto, there are approximately 2,700 companies which employ fewer than 20 employees, a workforce of approximately 18,400; and about 1,250 workplaces with more than 20 employees with a workforce of around 300,600 persons.

In order to service their responsibilities within their resources, the Industrial Health and Safety Branch of the Ministry has developed a cyclical system of inspection frequency, one based upon their past experience with each employer, including complaints received regarding infractions of the relevant regulations. The cycle can vary from monthly visits to one visit in 60 months, depending upon the nature and the record of the workplace, as indicated. The priority attention of their staff must be given to workplace death, workplace injury and work stoppages, and the workload which may exist at any given time in these priority areas can easily influence the ability of the Ministry personnel to adhere to their cyclical schedule.

The total complement of the Occupational Health and Safety Division is approximately 730. In addition to inspectors, this complement includes physicians, industrial hygienists, scientists, technicians, nurses, ergonomists, engineers, and other support staff.

The Ministry has made it very clear that they are not an educational institution, and feel that this function is particularly vested in the nine associations charged with safety and health education and funded under the Workers' Compensation Board, as well as the Ontario Federation of Labour resources centre. Notwithstanding these other educational tools, however, the Ministry itself does educate workers and employers in the

requirements of the Act and regulations through meetings, speaking engagements and publications.

3.1.2 Right-to-Know Philosophy

The Ministry of Labour is formally committed to the principle of the right-to-know for workers regarding their workplace and its hazards, and is of the opinion that a great step toward this end has already been taken in the Occupational Health and Safety Act. The Ministry does however, recognize that there are a number of areas in which improvements could be made such as labelling and better data sheets.

It is the Ministry's position that the most effective approach to an expansion of the right-to-know must involve federal approaches in order to give a comprehensive and international coverage to the information requirements. In an effort to address some of the recognized concerns, the Ministry has been taking part in the Workplace Hazardous Material Information System (WHMIS) discussions under the auspices of Labour Canada. This is a tripartite effort including the federal government and all the provincial governments, along with labour and industry (see note on WHMIS and CCOHS -- Appendix 10 and Section 5.3).

As has been noted above, the Canada-wide involvement in the right-to-know is held to be essential by the Ministry for two reasons. Firstly, the national or interprovincial quality of much of Canada's trade makes it highly desirable to come to common understandings on the information details and formats for making such a concept as the right-to-know reasonably useful. Secondly, without the cooperation of the federal government, information disclosure requirements could not effectively be made of foreign suppliers, thereby excluding materials being received from other countries.

Both of these concerns require national cooperation, and the Ministry of Labour is of the opinion that solid progress is being made toward this goal.

The Steering Committee of WHMIS is expected to have a report prepared early in 1985. It is anticipated that this will permit Ontario to decide whether to stay with the federal effort, or whether to go it alone on any changes felt to be necessary to provincial legislation in this regard. Again, it should be noted that the Ministry remains optimistic that agreement will be reached at the WHMIS level of discussion.

The Ministry also sees a number of advantages to the provincial approach in the right-to-know, rather than a local one, and would likely oppose the development of a local by-law should it appear

evident that the by-law would adversely affect the implementation of the Occupational Health and Safety Act as it presently stands.

3.1.3 Investigation and Enforcement

The Ministry has taken considerable pain and effort to ensure that the widest publicity is given to the existing protections available to workers in Ontario's workplaces. They have produced a large poster, among other information materials, which displays the germane provisions of the Occupational Health and Safety Act, including the wide powers available to the safety representatives and the joint health and safety committees. The telephone numbers of the Ministry offices are made available on this poster which is widely distributed throughout the province.

In addition, numerous copies of the Act and the Regulations have been made available, and these, along with the now familiar posters above, are required to be posted in prominent areas in the workplace.

In an investigation of hazard complaints where workers are concerned because of possible exposure to toxic substances in the workplace, an inspector from the Ministry would attend the workplace to assess the circumstances and ensure that data sheets on any hazardous material used in the workplace were available. If data sheets were not available or were inadequate, the employer would be directed to obtain further and better details from the supplier. Should the employer claim that the composition of a particular substance is confidential, information on the substance could be obtained by a Ministry of Labour inspector using Section 28(1)(1)of the Act. Sufficient relevant information would be disclosed to the joint health and safety committee to enable a person knowledgeable about the danger to form an independent judgment of the hazards.

The employer may purchase a mixture from a manufacturer who does not wish to reveal the ingredients, except in general terms, or who provides the information to the employer upon a pledge of secrecy. This does not, however, relieve the employer from obtaining and furnishing sufficient information concerning the mixture to the workers and the joint health and safety committee.

The inspector may decide that a consultation by the Occupational Health Branch is necessary. The Occupational Health Branch consultant visits the workplace to evaluate the exposure hazard. This may involve a walk-through, ventilation assessments and air sampling for hazardous agents. Reports of these assessments are provided to the joint health and safety committee and are to be posted in the workplace.

The Ministry inspectors always investigate those cases where notification is received of workplace death, major injury or of explosion or fire. It is mandatory in these situations for the employer to inform the Ministry immediately, and to provide a written report to the Ministry Director (Section 25 & 26 - OHSA).

In addition, the Ministry also investigates unresolved work refusal situations upon notification (Section 23 - OHSA).

3.1.4 Health and Safety Information Provision

With respect to the provision of health and safety information, the Ministry takes an active role, particularly in the preparation and distribution of Hazard Alerts and Data Sheets.

Health Alerts

These are prepared by the Ministry when it appears (i) that there is potential for serious occurrences to occur on a province-wide basis; (ii) the hazard is known to be a fairly common occurrence; (iii) the hazard is not likely to be covered by other safety publication and it is considered that the alert will be an effective mode of communicating awareness of the hazard to both employer and workers. Hazard alerts are distributed to workplaces where it is anticipated that the hazard may be likely to occur.

Data Sheets

Data sheets have been prepared for specific chemicals used in the workplace. They are made available to the inspectorate who will distribute them where appropriate, such as to persons requesting information on or making inquiries relating to that particular substance. Inquiries to head office on a substance will be directed to the local office of the Industrial Health and Safety Branch so that the inspectors will be aware of the concern and will investigate. To date, data sheets have been prepared for the following substances:

Acetone, benzene, beryllium, cadmium, chlorine, ethylene oxide, phosgene, styrene, toluene, trichloroethylene, xylene.

3.2 MINISTRY OF CONSUMER AND COMMERCIAL RELATIONS

3.2.1 General

It is the responsibility of this Ministry, through the Fuels Safety Branch, to oversee the application of the Gasoline Handling Act and the Energy Act, both provincial statutes.

Under these legislative tools the Ministry is charged with approving all plans and drawings for self-serve stations and propane installations. (Propane is the current priority of the Branch, and it is worthy of note that there are no self-serve propane installations allowed at this time).

3.2.2 Inspection

They also have a routine inspection program for the surveillance of the regular full-service stations.

The Branch is also involved in the proper removal of, or the investigating and assessing requests for 'deviations' (i.e., permission to remain in situ with safeguards applied) for old oil tanks which have been abandoned, or which are left as a result of the conversion program from oil to natural gas. All such situations are to be referred to the Fuels Safety Branch by the installers of the gas systems, and these investigations provide a considerable workload for their staff.

Another responsibility of the Ministry is the requiring of proper placards on trucks carrying gasoline, propane, fuel, oil, etc. The trucks must also carry certain basic safety equipment such as fire extinguishers. Enforcement of the legislation is also carried out by the police forces, both the Ontario Provincial Police and the local constabulary.

3.2.3 Spills Management

It should be noted that the responsibility for the handling of spills, including those of oils and gasoline, belongs to the Ministry of the Environment, and not to the Ministry of Consumer and Commercial Relations.

3.3 MINISTRY OF HEALTH

3.3.1 General

The Ministry of Health is the agency responsible for the overseeing of the public health programs undertaken throughout

the Province, but the actual implementation of the work has traditionally been devolved to the local health agencies. There are 43 such health units in Ontario.

Philosophically, the Ministry is supportive of increased access to information, particularly for workers, and views this as preventive public health. There is, however, some reservation on their part regarding the expected public health benefit to be gained from indiscriminate public disclosure of hazardous substances and their locations, both from a security aspect, and from a relative lack of information on specific health effects. The position appears to be that, properly handled, few substances present a problem, and knowing of their existence in an adjacent property serves little public health purpose by itself. This is quite different for the worker who is actually responsible for the proper handling of the material, both for his/her own safety and for the community's protection.

The Ministry currently provides information, frequently on very short notice, in response to various queries, and these include many public health professionals in health units throughout the province, as well as the public. Thus, they have themselves been active in information provision regarding such hazardous substances. They see such information to be within the proper parameters of public health's mandate.

3.3.2 Confidentiality

Under the Health Protection and Promotion Act the Ministry expects that there will be the same presumption of confidentiality traditional to public health in most matters.

The issue of how much confidential information should be released to the Medical Officer of Health when it involves the occupational environment or industrial emissions, is still a matter which is under discussion. Currently, the legislation does not state that the Medical Officer of Health must release confidential information, but that he/she shall report the results of the investigation to the complainant. It is the Ministry opinion that legal interpretation of this aspect may reveal the answer to the whole issue of confidentiality in the workplace and in industrial settings.

3.3.3 Potential Ministry Role

While the Ministry of Health is unlikely to be a lead agency to further the right-to-know without specific new legislation, the Ministry is not to be discounted as a potential proponent for the provincial right-to-know bill discussed in Section 7.3, as one alternative to municipal legislation.

Such an initiative would be in keeping with current public health philosophy, as indicated in the introduction, and with the structure and the intention of the Health Protection and Promotion Act. This new Act already suggests that the Ministry feels responsible for certain elements of both the environment and the workplace. Continuing with the principle of a right-to-know would not be inconsistent with the Ministry's recent work.

With respect to the new provisions of the Health Protection and Promotion Act the Ministry is taking part in tripartite meetings with the Ministries of Labour, and of the Environment, to establish the actual working relationships which will take place in regard to complaints which are made pursuant to the provisions of the Act when it comes into force.

As to the Ministry providing a leading role function in increasing the access to information, a number of alternatives to a Toronto specific by-law (see Section 7) were reviewed with the Ministry contact person, and several of these were regarded as viable routes which could be examined, particularly on behalf of the workers and of the Medical Officers of Health. However, no commitment was indicated at this time on behalf of the Ministry of Health, either in taking a lead role, or in any other legislative support in the matter.

Nevertheless, the encouragement of such a role for the Ministry should be considered a prime recommendation for an appropriate provincial approach to the issue.

3.3.4 Enforcement Role

The Ministry of Health does have all of the enforcement powers traditionally associated with the local Medical Officers of Health. However, the Ministry chooses to devolve all enforcement of legislation under the Health Protection and Promotion Act to the 43 local Health Units. As such, the Ministry holds its power in abeyance as in the past, and very seldom exercises its legal weight directly in the field. However, it has assumed an advisory role in many instances, and is likely to continue this in the future. Nevertheless, the ultimate responsibility for the public health services in the Province, as indicated under the Health Protection and Promotion Act, would appear to rest more than ever with the Ministry of Health, particularly through the Chief Medical Officer of Health.

3.4 MINISTRY OF TRANSPORTATION AND COMMUNICATIONS

3.4.1 Present Legislation

With respect to the transportation of dangerous goods, the Ministry is currently working under Regulation 456 of the Highway Traffic Act. This regulation is enforced by the Ministry, as well as by the police forces across Ontario charged with carrying out the Highway Traffic Act.

Currently, products transported in quantities in excess of 1130 kg (including the packaging) requires signing under three (3) categories:

a) dangerous
b) compressed gas
c) poison

Also under Regulation 456, bulk commodities require signing under 5 categories:

1) flammable
2) acid
3) corrosive liquid
4) compressed gas
5) poison; and

for the signing of all quantities of radioactives.

Other legislation which is the responsibility of the Ministry include the Public Commercial Vehicles Act, the Public Vehicles Act and the Motor Vehicles Transport act. None of these legislative tools appear to be relevant to the access to information matters being discussed in this review. Again, it should be noted that both the Ontario Provincial Police and the local police forces may enforce the provisions of these acts.

3.4.2 Current Legal Development Work

As a result of an initiative by the Dangerous Goods Directorate of the federal Ministry of Transport, the Ontario Ministry of Transportation and Communications has been actively involved in the development of a Canada-wide system of safe handling for dangerous commodities, with particular reference to those materials, chemicals and substances transported by road in Ontario. The umbrella federal legislation is the Transportation of Dangerous Goods Act, which by common provincial agreement will provide the model standards for each province to adopt upon the Regulations under the federal Act becoming law. As can be expected, the legislation package under the Transportation of Dangerous Goods Act is comprehensive and complicated, with the

Regulations comprised of 15 pieces dealing with specific aspects of transport.

Ontario has prepared its Dangerous Goods Transportation Act, 1981, to be in conformity with the federal regulations, and is to be proclaimed in effect upon the regulations becoming law.

Under the Dangerous Goods Transportation Act, the 300 inspectors working with the Ministry of Transportation and Communications will have comprehensive powers to stop vehicles for inspection wherein a dangerous good, as defined by the legislation, is believed to be being transported.

3.4.3 Legislative Purpose

The placarding and the way-bill systems to be introduced are both seen by the Ministry as intended to be of particular benefit for emergency response agencies, and for public safety in general.

3.5 MINISTRY OF THE ENVIRONMENT

The Ministry of the Environment is of the opinion that the public can obtain information on hazardous substances, unless such is precluded from release by-law. In addition, this principle of disclosure has been submitted by the Ministry to the Williams Commission, the body which has led to the development of Bill 80 - The Privacy and Access to Information Act, 1984. It is the opinion of the Ministry that if this Bill should become law, a review of their statutes and administrative procedures regarding secrecy and access to information would be necessary and would be undertaken.

With respect to the community at large having access to information on hazardous substances, one view suggested by the Ministry is that such information would likely not be of practical benefit to the public other than to provide for personal satisfaction, a satisfaction of curiosity or satisfaction of a principle regarding the public's right-to-know issue. It is possible, in this view, that people may become unduly concerned with chemicals that they do not understand if given access to information about them.

3.6 METROPOLITAN TORONTO LICENCING COMMISSION

The Commission is responsible for the enforcement of the Metropolitan Toronto Licencing by-law, and provides this service across the Metro area on behalf of the 6 area municipalities.

It is the opinion of the Commission that should a local by-law for Toronto be sought the enabling legislation leading to a right-to-know by-law would be easier to obtain if it were a request through Metro Council rather than if the City of Toronto were to ask for it alone. This would, of course, require getting the other five municipalities to agree to the proposal both in principle and in legislation. The Commission also feels that it would rather not be involved in the enforcement of any element of the City's by-law, should a local one exist, and would prefer to become responsible only in the case of it being a Metropolitan Toronto responsibility.

3.7 METROPOLITAN TORONTO ROADS AND TRAFFIC DEPARTMENT

3.7.1 General

The Roads and Traffic Department of Metropolitan Toronto is responsible for the maintenance and signage of those roads which are designed to serve the Metropolitan Toronto area, including the City of Toronto.

The Department has for some time taken part in the Metropolitan Toronto Technical Traffic Committee (The Ministry of Transportation and Communications also sits on this committee). Recently, a subcommittee of this group was formed, entitled the Transportation of Dangerous Goods Subcommittee to examine the most appropriate means to control truck traffic in particular.

Possible strategies to be examined include:

a) time of day travel allotments for trucks;

b) routes selected based on the traffic volume and the accident ratings and frequencies; and

c) avoiding those routing situations where underground populations may be affected in the event of a spill of a dangerous cargo (i.e., underground malls and subway routes).

The Department is very supportive of the work of the federal and provincial governments in the development of the Dangerous Goods Transportation Act, 1981 (Ontario), and the Transportation of Dangerous Goods Act regarding transit controls for substances travelling by road.

3.8 DEPARTMENT OF PUBLIC HEALTH

3.8.1 General

At the present time, the powers of the Medical Officer of Health are defined under the Health Protection and Promotion Act, and there is no provision for the gathering of information toward public disclosure. In the provisions of the Act there is an expanded role recognized for the Medical Officer of Health in matters of environmental and occupational health, the details of which, in respect of the Ministries of Labour and the Environment, are currently being discussed at the Ministerial level for clarification of the respective roles. This is necessary to ensure clear responsibility and enforcement, and to avoid duplication.

As has been noted earlier, consideration of a by-law must address the matter of the sense intended for the concept of 'knowing'. If only the name of the material is sought from the process it may be a relatively simple task, and the Medical Officer of Health could be considered an appropriate body to carry this out. However, if the intent is to make people well-informed about the materials, then the resources and the costs necessary in the research and/or education efforts will have to be carefully reviewed.

SECTION 4: THE ADEQUACY AND AVAILABILITY OF INFORMATION ON CHEMICAL HEALTH HAZARDS

4.1 THE STATUS OF CHEMICAL HEALTH HAZARD EVALUATION IN NORTH AMERICA

Since the end of World War II the volume and number of chemicals produced has increased enormously. For example, in the 25 years following the war, the use of mercury for manufacturing chlorine increased 40 times; the production of synthetic fibres increased 60-fold and the production of synthetic organic chemicals increased 10 times. In 1982, output of the top 50 chemicals in the U.S. totalled 208 million tonnes, or approximately one ton for every person, however, this is an overall 0.8% decrease from production levels of the early 1970's, and probably reflects the world-wide economic recession.

The total number of chemicals produced has also increased dramatically. As of November 1977, the Chemical Abstract Service computer registry of chemical compounds contained over 4 million distinct entries and was growing at the rate of about 6000 compounds a week. A more recent report (1984) completed by the U.S. National Toxicological Program stated that approximately 1000 new chemicals are registered for marketing in the U.S. each year, but that only 2 to 5% are "flagged" for concern by regulatory agencies (1).

Although it may not be necessary to evaluate all chemicals, most have not been tested for their possible health effects. Of the estimated 66,000 chemicals (pesticides, cosmetics, drugs, foods and commercial chemicals) in common use in North America, only a fraction have had any hazard evaluation or toxicological testing completed. The best evaluated group of chemicals is drugs, and the least evaluated are 'unknown' commercial chemicals. It also shows that very few chemicals in any group have had a hazard assessment or toxicological evaluation completed, and most have had either no assessment, or "less than a minimal" one. The three groups of least evaluated chemicals, those in general commerce, are those covered by the U.S. Toxic Substances Control Act (TSCA). But this law, which is enforced by the Environmental Protection Agency (EPA), cannot require that a new chemical be tested for its possible health effects, unless there is an indication that the substance may be hazardous.

A toxicological assessment should include an evaluation of the carcinogenicity and/or mutagenicity of the chemical being studied, but it has recently been suggested that only approximately 7,000 (10.6% of the chemicals in common use in North America) chemicals have been evaluated for their mutagenicity (1). In addition, only between 800 - 900 (1.2 -

1.3%) have been tested in animals for carcinogenicity and other health effects. The nature of toxicological assessments is reviewed below.

Although only a small proportion of the chemicals in common use in North America have been evaluated, it is unlikely that this situation will change much in the near future. This is because, given the existing toxicological facilities in the U.S., where most of the testing in North America is conducted, only about 500 chemical evaluations can be completed annually. This, taken with the figure of 1,000 new chemicals being registered for marketing in the U.S. annually, suggests that the proportion of untested chemicals is actually increasing, rather than decreasing. The costs of chemical evaluation should also be considered. It has been estimated that an adequate carcinogenic study of the effects of one chemical in two animal species, for example rats and mice, costs between $1.5 and 3 million (U.S.) to complete and approximately three years of research (2). These high financial and manpower costs, and the political and economic situation in the U.S. make it unlikely that the proportion of chemicals evaluated will increase significantly in the near future.

The data presented above show that only a fraction of the chemicals in common use in North America have had any form of hazard evaluation completed, that the proportion of untested chemicals is increasing, and that it is unlikely that this situation will improve in the near future. Given the existing rate of evaluation and cost, it would take 97 years and between $72 and $144 billion (U.S. - 1983) to test the existing (1984) chemicals in commercial use only (48,463), excluding any new ones. If interactions between chemicals are also taken into account, the number of hazard evaluations that could be done would be almost infinite. Clearly, it is necessary to prioritize chemicals for testing, even though it may not be necessary to evaluate all chemicals.

4.2 COMPONENTS OF CHEMICAL HEALTH HAZARD EVALUATION

Research on the health hazards of chemicals is usually conducted using one or more of three main methods: epidemiology; animal studies; and carcinogenesis or mutagenesis studies. Each of these methods is briefly discussed below.

Epidemiology

Epidemiology is the only direct means of demonstrating the occurrence of health hazards in human populations. It is the only one of the three methods that actually examines human health effects, rather than extrapolating from animals or other experimental systems.

It can be difficult to identify human populations that have been exposed to only one chemical. Therefore, it is often necessary to correct for exposure to other substances, such as cigarette smoking and alcohol consumption. But even with correction for such multiple exposures it is often difficult to establish a cause and effect relationship for a particular chemical. It may also be difficult to measure the level(s) of the substance that the population has been exposed to. Often exposure levels within the selected population vary, or they may have varied over time. More frequently, exposure levels in the past were not measured.

Another drawback of epidemiological studies is that the absence of a health effect does not necessarily prove there is no relationship between exposure to a particular chemical and health. This is also true for animal studies. In order to detect a rare health effect large sample sizes are required. Of course, the frequency of occurrence of a health effect will depend on the exposure level as well, so both the sample size and the exposure level can determine if a health effect is observed. Because large sample sizes increase the sensitivity of epidemiological studies, they are obviously to be preferred.

Epidemiological studies also tend to be long-lived because some health effects can take many years to develop. Some cancers have extremely long 'latency' periods (e.g., 15-20 years), and so do not manifest themselves until many years after the initial exposure. This means that migration in and out of the exposed population becomes important and studies should be restricted to long-term residents.

Animal Tests

Animals are often used to assess the health hazards associated with exposure to chemicals. Rodents (rats, mice) are usually chosen because they are metabolically and anatomically similar to humans. However, it is always necessary to extrapolate the health effects noted in animals to man and although correspondence is good, it can seldom be completely accurate. For example, benzene causes leukemia in humans but data from animals are equivocal. This shows metabolic differences can be important.

Another example of this is that small animals are not as susceptible to toxic chemicals as humans. This is partly because

chemicals do not persist as long in small animals as they do in large animals, such as humans, because they are metabolized faster. It is also because humans live relatively longer than small animals and so there are more cell divisions in a human lifespan than a small animal's lifespan. Therefore, there are more opportunities for the disruption of cellular replication and development. This can result in an underestimation of human health effects from animal studies.

Extrapolation can also be difficult because populations of laboratory animals are usually inbred and therefore genetically similar. Human populations are very quite and so comprise a much more genetically diverse population than laboratory animals. This can make animal to human extrapolations inaccurate.

Another feature of animal studies is that the test animals are usually exposed to large doses of a single chemical. These conditions are unlikely to occur in human populations where doses are often small and involve more than one chemical. This means that it is often necessary to extrapolate from the health effects caused by relatively high doses (in animals) to those likely to be caused by relatively low doses (in man). In addition, little is known about how mixtures of chemicals interact with each other. Although we are rarely exposed to a single chemical, little research is being done in this area, although some studies of short-term feeding suggest synergism may not be a universal phenomenon.

Animal studies on relatively small test populations also necessitate the extrapolation of results to much larger human populations.

Carcinogenesis and Mutagenesis Studies

Carcinogenesis and mutagenesis studies are usually conducted *in vitro*. Usually either a particular cell line from a plant or an animal is cultured in the laboratory or bacteria are used. Therefore, it is necessary to extrapolate either from one particular animal or plant cell type to a whole human being (composed of many cell types) or from bacteria to humans.

The main advantages of this type of test are that they are relatively inexpensive and simple to perform, when compared with the other methods outlined above.

Unfortunately, these short-term tests are only available for chromosome aberrations, carcinogenesis and mutagenesis. Health effects other than cancer usually cannot be predicted; these include reproductive abnormalities, central nervous system disorders and suppression of the immune system. Also, there is still some uncertainty about what a mutation of a cell's DNA actually means in terms of carcinogenesis. Research has shown

that most mutagens are carcinogens, which suggests that the ultimate cause of cancer is a mutational change in the DNA. Evidence also suggests that there is a correlation between the potency of a mutagen and its carcinogenic ability.

Although the correlation between mutagenesis and carcinogenesis is generally good, there are exceptions. For example, some chlorinated organic chemicals which have been found to be carcinogenic in man and animals, do not cause mutation in the best-known short-term test, the Ames test (using Salmonella bacteria). This suggests that the relationship between carcinogenesis and mutagenesis may not be simple.

4.3 THE PROBLEM OF MANIPULATED HAZARD EVALUATIONS

Industrial Bio-Test Laboratories Inc. (IBT), a commercial testing laboratory for chemicals based in Illinois, falsified many health and safety studies it had undertaken on behalf of pesticide manufacturers in both Canada and the U.S. The studies were conducted to support pesticide registrations and to establish tolerance levels for pesticide residues on foods. Since 1976-77, when the fraud was uncovered, 113 pesticides have been audited by the Canadian government and replacement studies for the invalid IBT work have been, or are being, prepared by manufacturers and are in the process of being evaluated by federal officials. The pesticides involved included most of the major insecticides, fungicides and herbicides used in Canada and in the production of many imported foods. It is estimated that the replacement studies will cost the Canadian chemical industry $1 million per chemical, or approximately $100 million altogether. In October 1983, three former IBT officials were convicted in the U.S. of falsifying chemical health and safety tests submitted to the U.S. government.

The IBT affair raises several important questions including whether, and how often, falsified health and safety data are submitted to government agencies and whether the chemical manufacturers were aware that falsified data were being submitted on their behalf by IBT.

Both the federal government and the chemical industry have argued that IBT's practices were an aberration and not a common occurrence in the laboratory testing of chemicals. Dr. A.B. Morrison, former Assistant Deputy Minister, Health Protection Branch, Health and Welfare Canada stated that "It is not a common practice, I can assure you, for companies to submit falsified data... This situation appears to have been related to problems at IBT ... something which went wrong in a particular company" (10). Similarly, the chemical industry argued that it was not

"ever correct (for anyone) to charge that IBT was just the tip of the iceberg" (9).

Concerns in the U.S. that IBT was not merely an aberration prompted two government enquiries. Firstly, a joint study conducted in 1979 by the U.S. Environmental Protection Agency (EPA) and the Food and Drug Administration (FDA) showed that of the 83 audits of testing laboratories conducted between 1977 and 1982, four produced referrals to the Justice Department for possible criminal action. Secondly, a congressional staff investigation completed in 1982 raised several concerns with the U.S. EPA - FDA laboratory auditing programs. These concerns included evidence that the EPA had been lax in carrying out enforcement actions where problems were identified, such as situations where "questionable or possibly fraudulent acts by certain laboratories or companies submitted pesticide safety and health data" to the U.S. EPA were involved. The investigation also noted that the EPA's audit summaries contained "several serious questions about the practices followed by some laboratories." These included questions about experimental practices that biased test results. Even the EPA itself has admitted that its audit program is less than adequate, with only one full-time professional assigned to the program.

Other evidence of falsified health and safety data is not uncommon. A few examples are outlined below:

Phosvel

In 1971, several hundred Egyptian water buffalo became paralyzed and died, and a pesticide was implicated as the causative agent. In the same year, studies showing that the same pesticide was neurotoxic in chickens were reported to the manufacturer, but these were seemingly ignored. Several years later employees manufacturing the pesticide were diagnosed as having serious central nervous system disorders including paralysis. Studies conducted for the manufacturer by IBT concluded that it did not cause nerve damage, but when the data were examined by the EPA they were said to be "questionable" and the manufacturer agreed with the EPA that the study was worthless and needed to be repeated. A new study showed evidence of central nervous system damage and paralysis.

Chlordane/Heptachlor

The original evaluation of these pesticides was conducted by two commercial testing laboratories under contract to the manufacturer. One of these studies noted a dose-related incidence of "liver nodules" in treated animals but concluded that the pesticides were non-carcinogenic. An independent

reassessment of the data was undertaken by the EPA that found that there was a statistically significant increase in the incidence of liver cancer which was caused by chlordane and heptachlor (5). This could not be accounted for by a difference of scientific opinion because there were no discrepancies in the diagnoses of the untreated control animals between the testing laboratories and the EPA. Further studies concluded that chlordane and heptachlor are carcinogenic in mice and probably in rats as well.

In 1977, a U.S. federal grand jury issued an indictment to the manufacturer charging that "the defendants ... conspired to defraud the U.S. and conceal material facts from the U.S. EPA by failing to submit data which tended to show that heptachlor and chlordane induced tumours in laboratory animals and thus might pose a risk of cancer to humans" (6). They were fined $1,000.

Red Dye #40

Red Dye #40 is a food dye marketed by Allied Chemical. A commercial testing laboratory was contracted to undertake the required toxicological testing, and the mainstay of this study was to be a two-year carcinogenicity test on rats.

Unfortunately, after only six weeks a respiratory infection killed many of the rats and the total mortality was so high that the experiment was terminated after 21 months, leaving only 59 of the original 300 rats available for autopsy (3). The only significant finding was kidney damage in some animals, but even this diagnosis was omitted from the report to the U.S. FDA (4). Subsequently, Allied stated that Red Dye #40 "has undergone one of the most extensive batteries of testing ever used for a food colourant. The screening included two series of feeding tests - one lasting two years, another lasting five years". But no five-year study was ever reported to the FDA, and as mentioned above, the two-year study was severely flawed by the premature death of most of the experimental animals.

The three examples discussed above demonstrate that IBT's manipulation of health and safety data is not unique. Although direct falsification is not always the problem, it appears that the interpretation of experimental data can sometimes be suspect, and that occasionally data have simply been ignored. Thus the problem is larger than falsification alone.

From a Canadian perspective, it is unlikely that we can accurately assess the validity of health and safety data on chemicals. This is because the relevant Canadian regulatory agencies rely heavily on U.S. government reviews of U.S. health and safety data. Very little hazard evaluation research is conducted in Canada, and therefore, we are forced to depend on

U.S. assessments of the validity of health and safety data. As a result, some Canadian environmental groups have suggested that there is a need for an independent laboratory facility. This was to have been provided by the Canadian Centre for Toxicology until the recent government cutbacks.

There is some doubt about whether or not the chemical manufacturers knew that IBT was submitting falsified data to the U.S. government. Dr. A.B. Morrison of Health and Welfare Canada stated that "...we don't believe (the pesticide manufacturers involved) knew about the data being falsified or fiddled with, or distorted. They were as chagrined by this as any of us were ..." (10). But documents entered as evidence during the IBT trial suggest that some manufactureres did know about some of IBT's activities. A 1978 audit by the U.S. EPA and FDA of one of IBT's laboratories showed the falsification of test results and the apparent knowledge of the client pesticide manufacturer. Specifically, the Monsanto Company of St. Louis, Missouri, was aware that extra mice were added to a cancer study done on the herbicide Machete in the mid-1970's.

There is, therefore, some doubt about the extent to which the client chemical manufacturers were aware of IBT's practices. Bearing in mind that the IBT incident may not have been a unique occurrence, it is possible that other client chemical manufacturers could be aware of falsified or manipulated data being submitted on their behalf. This unfortunate possibility can only harm the public credibility of the chemical manufacturers.

One of the potentially serious outcomes of the IBT incident is that if it were not a unique occurrence, some health and safety information made publicly available may be inaccurate. Therefore, decisions based on these data, such as medical diagnoses and treatment, could be based on invalid information. Unfortunately, it is not obvious whether or not this has occurred, and if so, its extent.

4.4 BRIEF OUTLINE OF MAJOR NORTH AMERICAN LEGISLATION AND PROGRAMS FOR CHEMICAL HAZARD EVALUATION

(Note: Major U.S. legislation and programs on hazard evaluation are included because U.S. evaluations are extensively used in Canada.)

4.4.1 U.S.A. (Federal)

Research into the potential health hazards of chemicals is undertaken by many government agencies and private laboratories. These research programs are required by federal legislation and by priorities established by the various concerned agencies.

The table below shows the major U.S. legislation and programs which are concerned with the evaluation of chemicals. Generally, they fall into two categories; those which establish regulations containing maximum concentrations (e.g., Safe Drinking Water Act, Occupational Safety and Health Act), and those which require toxicological research either for the registration of various groups of chemicals, or for informational and policy purposes (e.g., Toxic Substances Control Act, National Toxicology Program). The major legislation and programs that require toxicological research are outlined below; legislation which establishes regulations containing maximum concentrations or exposure levels is not discussed.

Major U.S. Legislation and Programs
on Chemical Hazard Evaluation

Legislation or program	Key or enforcing agencies
Clean Air Act	Environmental Protection Agency
Clean Water Act	Environmental Protection Agency
Safe Drinking Water Act	Environmental Protection Agency
Occupational Safety and Health Act	Occupational Safety and Health Administration
Toxic Substances Control Act	Environmental Protection Agency
Federal Insecticide, Fungicide Rodenticide Act	Environmental Protection Agency
Federal Food, Drug and Cosmetic Act	Food and Drug Administration
National Toxicology Program	Department of Health and Human Services; National Institute of Health, National Cancer Institute, and National Institute of Environmental Health Sciences Food and Drug Administration; National Center for Toxicological Research Centers for Disease Control; National Institute for Occupational Safety and Health

Toxic Substances Control Act

The purpose of the Toxic Substances Control Act is to identify and control chemicals that pose an 'unreasonable' risk to human health or the environment. This is done in four major ways:

- Developing and gathering information on chemicals used commercially;
- Requiring industries to provide information on chemicals suspected of being a hazard to human health or the environment;

- Taking regulatory actions, varying from labelling requirements to limiting, or occasionally banning, the use of particular chemicals;

- Requiring that the EPA be notified before making or importing a new (i.e., not listed on the TSCA inventory of existing chemicals used commercially) chemical for a commercial purpose.

Federal Insecticide, Fungicide and Rodenticide Act

Under the federal Insecticide, Fungicide and Rodenticide Act all pesticides must be registered for use. Before a registration can be obtained, the manufacturer must submit data to the EPA showing that the product, when used as directed;

- is 'effective' against the pests listed on the label;

- will not injure man, animals, crops or damage the environment;

- will not result in illegal residues on food or feed.

Registered pesticides are classified for either 'general' or 'restricted' use, and those classified as 'restricted' may be applied by a certified applicator only. In addition, pesticide manufacturing plants must be registered and are subject to inspection by the EPA.

Federal Food, Drug and Cosmetic Act

The federal Food, Drug and Cosmetic Act requires that drugs and food additives be permitted for marketing only if they are established to be safe and effective. As with the Toxic Substances Control Act, manufacturers are required to provide information on drugs and food additives suspected of being a hazard to human health.

The Act also authorizes the EPA to establish a tolerance level (the amount of a pesticide that may 'safely' remain on a crop after harvesting) for each pesticide registered under the federal Insecticide, Fungicide and Rodenticide Act.

National Toxicology Program (NTP)

The National Toxicology Program (NTP) is a coordinated program involving many government agencies and research institutes. Its purposes are:

- To develop a reliable series of relatively inexpensive short-term tests and protocols useful for the public health regulation of toxic chemicals. This effort includes the development of test batteries to assess genetic, neurobehavioural, and immunological toxicities.

- To expand the toxicological profiles of chemicals tested.

- To increase the rate of testing of chemicals for such toxic effects as carcinogenicity, mutagenicity, reproductive and developmental effects within the limits of budgetary constraints. The NTP will also examine the chemicals for neurobehavioural, immunological, and other toxic effects as well.

- To communicate the results of the NTP's testing and methods development programs to government research and regulatory agencies; industry, labour, and environmental groups; the scientific community; and the public.

Chemicals are selected for hazard evaluation by state federal and municipal government agencies, academic institutions, industry and labour groups. In deciding which chemicals will be evaluated by the NTP, it is assumed that industry will conduct the necessary toxicological studies of commercial chemicals under the provisions of the Toxic Substances Control Act.

4.4.2 Canada (Federal)

Generally speaking, the manufacture of chemicals is regulated federally, and the uses of chemicals are regulated provincially in Canada. Therefore, the federal government, being largely responsible for the introduction of chemicals into the marketplace, is also responsible for ensuring their safety. However, the situation is not simple. For example, the health and safety of pharmaceuticals is exclusively a federal responsibility, while most research necessary for employee health and safety is a provincial responsibility.

Canadian legislation is similar to the U.S. legislation and programs in that it falls into two categories. Firstly, those which require toxicological evaluations to be completed, and secondly, those which establish regulations containing maximum

concentrations. Only those which require toxicological evaluations are discussed below.

There are three main federal acts which are concerned, at least in part, with the evaluation of potentially hazardous chemicals. These are the Environmental Contaminants Act, the Pest Control Products Act and the Food and Drugs Act.

Environmental Contaminants Act

The Environmental Contaminants Act is jointly administered by Environment Canada and Health and Welfare Canada and requires that chemical manufacturers or importers notify Environment Canada within three months of a new chemical being marketed in Canada if more than 500 kg of the chemical is involved annually. Importers and manufacturers are required to supply the name and quantity of the chemical and any known hazards. In contrast to the U.S. Toxic Substances Control Act, the Environmental Contaminants Act does not require premarketing notification, and there are no requirements for testing, although such tests can be required on a case-by-case basis, if the chemical is thought to be a significant health hazard. This is determined by Health and Welfare Canada, largely on the basis of literature reviews. The Act also has the power to ban the manufacture of chemicals if they are deemed to be sufficiently hazardous. Polychlorinated biphenyls (PCBs), polybrominated biphenyls (PBBs), mirex, chlorofluorocarbons and polychlorinated terphenyls (PCTs) have been banned under this clause.

Environment Canada is also developing and maintaining several chemical data bases. These include: an inventory of all PCBs and PCB users in Canada; a data base of chemicals and the companies which use them for Ontario; two data bases (one is confidential, the other is not) on chemical uses and quantities in Canada; and a new data base will be developed soon which will contain information about new chemicals being manufactured or imported into Canada.

Pest Control Products Act

The principal statute controlling pesticides in Canada is the Pest Control Products Act, which is administered by Agriculture Canada, although Health and Welfare Canada and Environment Canada have some responsibilities. The act prohibits any person from manufacturing, storing, displaying, distributing or using a controlled pesticide "under unsafe conditions".

Agriculture Canada also requires the registration of all pest control products imported or sold in Canada and can specify the scientific information to be submitted in support of a registration application. It also keeps records, inspects and

undertakes a variety of enforcement actions, both administrative and quasi-criminal, under the Act.

Therefore, pesticides, with some exceptions, must be registered before being sold in Canada. A registration application must provide sufficient information to allow Agriculture Canada to determine "the safety, merit and value of the control product". For these purposes the applicant must provide the results of test studies on the product's effectiveness; occupational safety and exposure; effects on host plant, animal, article or non-target organisms; residue persistence, retention and movement; analysis methods for detecting the control product and its residues in food, feed and the environment; environmental detoxification or neutralization methods; disposal methods for the pesticide and its empty packages; and information on the storage, display, stability and compatibility of the pesticide with other products. Where a residual pesticide is to be permitted for human consumption, the applicant must also provide test results on its effects or its residues effects on test animals.

To help applicants meet the requirements and regulations, guidelines and trade memoranda provide assistance in organizing the data to be submitted. For the registration of a pesticide containing a new active ingredient, data including draft label, product chemistry, toxicology, metabolism studies, food, feed and tobacco residue studies, and information on environmental chemistry, environmental toxicology and efficacy is required. Animal tests required to determine human health and safety of a pesticide include studies on acute toxicity, short-term, long-term and special effects. Both the active ingredient and the formulated control product have to be tested in order to determine whether the inert ingredients have an effect on the toxicity of the active ingredient.

Food and Drugs Act

The Food and Drugs Act prohibits the sale of any article of food that has in it, or on it, any harmful chemical, is unfit for human consumption, or is adulterated. In addition, food additives and drugs are registered for use under this Act.

Maximum residue limits have been established for approximately 90 agricultural pesticides under the Food and Drugs Act. Pesticide residue limits are set at levels which cover residues likely to be in food at the point of wholesale marketing; that is, at slaughter (in the case of an animal), at the removal from a warehouse (in the case of stored foods), or at the point of entry into the country (in the case of imported foods). The regulations were amended in 1978 to provide that a food is adulterated if it contains more than 0.1 ppm of any agricultural chemical not specifically listed.

While there are no administrative procedural manuals or documents used by Health and Welfare Canada which outline the types of scientific information required to support the establishment of pesticide residue limits in food, the Department does consider that the applicant is responsible for proving the chemical nature, level and safety of any pesticide residues in food.

Detailed information is required from the applicant on a variety of aspects. These include: the amount of the pesticide to be applied; frequency and times of application; satisfactory methods of analysis for determining residues in food; plant and animal metabolism studies; data on the quantity and chemical nature of residues remaining on foods at harvest, slaughter or point of sale, toxicity studies designed to evaluate hazards of residues to experimental animals; and proposed residue limits in food. Once the data is submitted by the applicant, a determination of the Acceptable Daily Intake (ADI) of the particular pesticide is made by Health and Welfare.

In addition to these three acts, the federal government does undertake toxicological evaluations itself. The chemicals selected for these evaluations are usually selected on the basis of literature reviews conducted by the various agencies with mandated responsibilities in this area. Most evaluations are undertaken by the Environmental Health Directorate of Health and Welfare Canada, and can have legislative implications.

4.4.3 Ontario (Provincial)

There are several provincial acts which require hazard evaluations of toxic chemicals. These include the Pesticides Act and the Occupational Health and Safety Act.

Pesticides Act

Under the Pesticides Act, the Minister of the Environment may:

(a) investigate problems relating to pesticides and the control of pests;

(b) conduct research relating to pesticides and the control of pests;

(c) conduct studies of the effect of pesticides and the control of pests on the quality of the environment (section 2).

The Act also provides the authority to classify all pesticides marketed in Ontario into schedules prescribing their use and describing possible hazards. There are six such schedules. Manufacturers are required to submit data on factors such as:

precautions for use (flammability, corrosiveness, etc.), type and size of containers, and the toxicology and environmental hazards. On the basis of these data, the Ontario Pesticides Advisory Committee classifies pesticides into one or more schedules.

Most toxicological evaluations conducted under the Pesticides Act are therefore undertaken by pesticide manufacturers or importers. However, the Ontario Pesticides Advisory Committee does award contracts and grants for empirical research into the health hazards associated with exposure to pesticides.

Occupational Health and Safety Act (See also Section 2.1)

The Occupational Health and Safett Act is designed to protect employees against health and safety hazards in the workplace. The Act applies to all employees except domestic employees, agricultural employees and teachers and academic staff in universities and similar institutions. It has two main purposes: to control toxic substances in the workplace and to facilitate the participation of workers in health and safety programs. Only the former purpose will be reviewed below.

The Act controls exposure to toxic substances in three ways:

1. A biological, chemical or physical agent may be designated and the limits of exposure established, the methods and procedures for control set out and medical examinations and record keeping prescribed. There are currently nine designated substances.

2. The Lieutenant Governor in Council may regulate or prohibit atmospheric conditions to which a worker may be exposed in a workplace and prescribe methods and procedures for determining the concentrations of a toxic substance in a workplace.

3. A Director may issue an order to an employer to prohibit, limit or restrict the use of a toxic substance. In deciding to issue an order a director can rely on a hazard assessment provided by the employer.

In addition, anyone who wishes to manufacture, distribute or supply a 'new' substance for use in a workplace must first submit details of its composition and properties to the Ministry. If the Ministry believes the substance could be hazardous, it will require an expert assessment to be made at the expense of the manufacturer (section 21, subsection 2). This should include the ingredients, the toxicological effects and the effects of exposure on human health (see also Section 2.1.2).

The Ministry's assessment of toxic chemicals is based partly on literature reviews conducted in-house, and partly on information

supplied by the manufacturer or supplier. This information conforms with the Organization for Economic Cooperation and Development's (OECD) guidelines on toxicological evaluations.

Chemical Assessment Program

The Ontario Ministry of the Environment is currently undertaking an extensive program to evaluate those substances that require further review and possible regulatory action due to their environmental and human health effects and exposure potential in Ontario. This program is being managed by a Chemical Assessment Committee which is a part of the Hazardous Contaminants Program of the Ministry.

The resultant list of chemicals is being further evaluated to decide what, if any, regulatory and non-regulatory actions are appropriate.

4.5 CONFIDENTIALITY OF INFORMATION

In the past it has been generally accepted by both U.S. and Canadian law courts that health and safety information submitted to regulatory agencies in support of an application to register a chemical for use is confidential. This is because such information is held to be proprietary and to be a trade secret. A trade secret has been defined as:

> "Any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers" (7).

Under the federal Access to Information act the head of a government agency is required to refuse to disclose any record requested under the Act that contains the "trade secrets of a third party". However, there is no definition of "trade secret" contained in the Act. This is important because trade secrets are treated differently than "financial, commercial, scientific or technical information..." and other types of information. There is a general exemption from disclosure, but there is discretion available to disclose third party information supplied under specific sections of the Act. Thus, whether the courts will apply a broad or narrow definition of "trade secret" is crucial.

This apparent prohibition on the release of data means that much valuable information is available only to the federal government.

This position has been supported by the Canadian Agricultural Chemicals Association, which noted that:

> "... data are submitted to federal government regulatory authorities in confidence to enable them to discharge their responsibilities for the protection of man and the environment. While always ready to provide this information to government, the chemical industry views government as the trustee of the information and not the owner" (9).

This issue became particularly relevant during the Industrial Biotest Laboratories (IBT) incident (see section 5.3.2 for a fuller discussion) when provincial agencies experienced difficulties in obtaining information from the federal government. The Canadian Agricultural Chemicals Association again commented:

> "While the data on the compromised products were being re-developed there was, naturally, a high level of anxiety about the continued presence of these products on the market. Provincial authorities, in particular, did not feel justified in accepting federal assurances that the compromised products could continue to be used while the supporting data on them were re-validated. They felt it was their responsibility to make their own judgments about that and, accordingly, requested the federal authority to give them access to the data on these products.
>
> "However, these data had been submitted to the Canadian regulatory agencies in confidence by the organizations that owned the data. This property represented many millions of dollars invested by each developing company and there was great concern that if it were made available to other authorities, competitors would get the information. The concern was not that provincial authorities would disseminate the information but that it would be simpler for Canadian media to get the information and that the more hostile critics of the industry among them would spread the information, claiming it was in the public interest for them to do so.
>
> "To understand the reason for the Canadian companies' and the Canadian authorities' unwillingness to release this information, it is necessary to understand the position of Canadian industry, and, unfortunately the Canadian economy as a whole, with respect to high technology.
>
> "The fact is we have very little of it that is our own. Most of it is transferred here by foreign companies for use by their Canadian affiliates. This transfer makes possible a great deal of Canadian production and also a great deal of high quality employment in Canada. It also provides the base

upon which Canadians may develop their own high technology resources.

"Meanwhile, if Canadian industry were to lose the use of this or any new technology, the consequences for the whole economy would be serious. In the case of agricultural chemicals it would severely impair Canada's position as a basic food producer and exporter. If it were demonstrated that confidential data could not be protected in Canada, then we would no longer have access to it.

"It was for this reason that the Canadian industry resisted the pressure to allow the release of confidential data on the IBT chemicals..." (9).

Government officials have also suggested that with respect to the IBT situations there were constraints on the release of information which pertained to proprietary data.

In the U.S., a recent Supreme Court decision has challenged the hitherto generally accepted notion that health and safety information submitted to regulatory agencies in support of an application to register a chemical for use is confidential. The decision held that the Environmental Protection Agency (EPA) has the right to disclose all health, safety and environmental data on pesticides, even though trade secrets may be disclosed along with the data. The chemical company Monsanto had brought a legal suit arguing that disclosure of such information was a wrongful taking of its property without just compensation, and therefore a violation of the Fifth Amendment of the Constitution. A Federal District Court in Missouri ruled in favour of Monsanto, but this was subsequently overturned by the Supreme Court in an 8-0 decision. However, information supplied between 1972 and 1978 is not subject to disclosure because of confidentiality provisions made under the federal Insecticide, Fungicide and Rodenticide Act during that time.

The effect of this decision on Canada is unclear, although it does suggest that health and safety information is not viewed as being a property right in the U.S. In Canada, however, confidentiality clauses are often included in legislation, so that health and safety information submitted to regulatory agencies cannot be disclosed. Therefore, the property rights argument is not being used in Canada and it is unlikely that this decision will significantly improve access to such information.

4.6 CONCLUSIONS

This section has demonstrated that only a fraction of the chemicals in common use in North America have had any type of

toxicological evaluation or hazard assessment completed. Moreover, the rate of testing is not keeping pace with the rate at which new chemicals are being marketed, so that only half of all new chemicals are evaluated to any degree. Therefore, the proportion of untested chemicals is actually increasing. It is unlikely that existing facilities will be sufficiently upgraded to improve this situation in the near future.

There is also evidence that a proportion of the toxicological evaluations that have been completed have been falsified or contain manipulated data. Examples of this have been discussed above and it seems likely that testing laboratories contracted by chemical manufacturers and those conducting clinical or field trials may be at least partially responsible. The role of the chemical manufacturers themselves is unclear. The proportion of tests and data that have been falsified or manipulated is unknown. Therefore, the limited health and safety information on chemicals is itself suspect.

Government legislation and programs exist in both the U.S. and Canada which attempt either to set maximum concentrations or exposure levels to chemicals, or to require registration for the manufacture or uses of particular classes of chemicals. As with almost all legislation, there are difficulties which are not easily resolved. One of the main problems is that health and safety information, which is submitted to regulatory agencies in support of an application to register the manufacture or uses of a chemical, has been judged to be confidential. This severely limits the availability of health hazard and toxicological information to provincial and municipal agencies, employees and the general public. However, as noted previously, a recent U.S. Supreme Court decision has ruled that health and safety information submitted in support of the registration of new pesticides is not confidential.

In conclusion, it is unlikely that currently available information on the health hazards associated with exposure to chemicals is sufficient for anyone including regulatory agencies, employees and the general public to adequately inform themselves on possible health hazards, even if there were easy access to chemical names under right-to-know legislation. However, the relevant legislation could be amended to ensure the public availability of data submitted to federal government agencies in support of applications to register the manufacture or uses of a chemical. If this information were available, it is more likely that it would be possible to become informed about health hazards, even though much of this data is produced by the chemical industry or contracted testing laboratories and could have been falsified or manipulated. Despite these difficulties, right-to-know legislation would have advantages. If such legislation were enacted, it would quickly become apparent to concerned groups, such as unions, how inadequate our information

on the health and safety of chemicals is at present. The right to information on chemicals would probably increase the amount, and improve the quality, of toxicological evaluations and hazard assessments. In order to supply unions, employees and possibly the public with information, government agencies would almost certainly have to undertake more experimental research themselves, so that they could review and evaluate industry and testing laboratory data better. In addition, the quality of research, particularly in the private sector, would probably improve as individuals and groups with a right-to-know became more knowledgeable. These benefits would appear to outweigh the short-term lack of information and the result would be improved toxicological assessments and hazard evaluations and a generally better informed society.

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SECTION 5: INFORMATION PROVISION AND EDUCATION

5.1 INFORMATION SOURCE CREDIBILITY

Credibility regarding the source of occupational or environmental health information is critical. One area indicating a clear gap in addressing concerns regarding any number of toxic or hazardous substances, is in the field of general information availability. There is no formal or informal arrangement for the education of many members of the workforce or their employers. As has been seen, there are nine officially established accident prevention associations working with the Workers' Compensation Board, but their efforts are very industry-specific, and they tend to focus on the employee groups who work in the large employer sector (see Appendix 2). Their specialty is in safety matters, and they appear to provide less in the way of health effect information to their industries, although this aspect of their service is being expanded.

In the organized sector of the work force, union health and safety committees are still relatively new in their development. These services are intended for the primary benefit of their own memberships, although many have made their information available to other parties on request. Although currently available services provide some measure of workplace health information, they still leave a great number of people without ready access to information about conditions in their workplace, particularly the hazards to health and safety which may exist. Most importantly, this inadequacy particularly precludes the employer from fulfilling his/her duty meaningfully under the Occupational Health and Safety Act, to the possible detriment of all.

5.2 MEDICAL OFFICER OF HEALTH

Thus, there would seem to be a most appropriate place for public health in the provision of occupational health and safety information at the local, municipal level through the Medical Officer of Health. This is the precise area where such information is currently least available, particularly for the small business enterprises. Such efforts would be non-duplicative, and would certainly not be in conflict with the legislative responsibility of the Ministry of Labour. They also would not be in contravention of the work being done by the safety associations.

These are important facts in the consideration of the proper role and work of the respective agencies involved in this field.

5.3 CANADIAN CENTRE FOR OCCUPATIONAL HEALTH AND SAFETY (CCOHS)

In recognition of this lack of a neutral source of quality health information from occupational exposures and situations, the Canadian Centre for Occupational Health and Safety was formed, located in Hamilton, Ontario. In order to ensure CCOHS' impartiality, it was deliberately created to be an independent institute. (The Act to create CCOHS was passed by the Parliament of Canada in 1978. It began operations in Hamilton in 1980). It is governed by a 39-member council representing all the major workplace interests and every region of the country.

The CCOHS' downtown Hamilton headquarters houses specialists schooled in the various disciplines related to occupational health and safety (including medicine, law, industrial hygiene, toxicology, ergonomics), information science and computer technology.

The Centre serves groups such as boards, commissions, joint workplace committees and the like, undertaking projects which frequently result in published reports that are made available to the public. They publish a quarterly newsletter called At The Centre, as well as other material. They are also developing an advancee computer service which will be available in the offices of the major labour organizations and at the Ministry of Labour offices in Toronto.

5.4 MINISTRY OF LABOUR

The Ministry of Labour has an excellent resource library consisting of a definitive selection of materials from throughout the world. Notwithstanding this, however, the Ministry does not see itself in an educational role, feeling that this is the mandate of the safety associations referred to earlier.

The Ministry has been most generous in making these excellent facilities available to our staff in the Department of Public Health, and it will be our aim to continue this resource availability in future.

5.5 RESOURCES OF THE DEPARTMENT OF PUBLIC HEALTH

At the present time, the Department of Public Health is planning an information service with respect to occupational hazards. This service would rely very heavily on outside sources of information. Should a by-law be considered which presumes a much greater involvement by the Medical Officer of Health, the understanding of "to know" would have to be clarified.

If "to know" is merely to provide a mechanism to obtain and make available information obtained from Toronto workplaces, the resources required would appear to be largely administrative in function.

However, if we are to interpret "to know" as providing a comprehensive educational resource with opinion and interpretation, the level of involvement would be much greater. Such research-oriented services also would be likely to duplicate other services such as the Canadian Centre for Occupational Health and Safety (Hamilton), and should be considered for purchase or access (see 5.3).

The Department of Public Health has already approached the Ministry of Health with respect to making the resources of the Canadian Centre for Occupational Health and Safety available 'on-line' to each Medical Officer of Health in Ontario. This would ensure that the basis for occupational hazard information is current and common across Ontario. This would be very helpful in determining the existence of certain hazards, as required under the Health Protection and Promotion Act. However, to date, no response has been made to our suggestion.

5.6 OTHER SOURCES OF WORKPLACE INFORMATION (D.H.C. SURVEY)

The need for workplace hazard information, particularly for both employers and employees in smaller industries, was demonstrated in the Metropolitan Toronto District Health Council report on Occupational Health.

The report contains the following table created from a survey which asked 29 agencies in the occupational health work field which organizations had been most helpful in dealing with occupational health and safety problems.

Table 6: Organizations Cited as Being Helpful

	Rank (N=29)	Percent of Total*
Literature	1	62%
Canadian Centre for Occupational Health and Safety	2	59%
Ministry of Labour	3	52%
Ontario Federation of Labour	4	42%
Safety Associatons	5	38%
Other Ministries	6	28%
Others (St. Michael's Clinic, Unions)	7	14%
No Response		17%

*Frequency of response (p. 66)

The survey also dealt with obstacles to carrying out the work of the agencies.

Table 7: Problems With Legislation Perceived by Various Groups

	Rank (N=29)	Percent of Total*
Enforcement	1	56%
Compensation	2	49%
Lack of Information	3	38%
'Red Tape'	4	31%
Gaps	5	24%
Overlapping Jurisdictions	6	20%

*Frequency of response (p. 67)

It will be noted that "lack of information" accounted for 38% of the obstacle identified. This is the very problem towards which the Department of Public Health industrial hygiene program hopes to make a positive contribution.

SECTION 6: THE U.S. EXPERIENCE WITH RIGHT-TO-KNOW LEGISLATION

6.1 INTRODUCTION

Since 1981 'right-to-know' legislation has been passed by many counties, cities and states in the U.S. This legislation gives employees, and in some cases community residents, the right-to-know what hazardous chemicals are being manufactured, stored, used or disposed of in their neighbourhoods and workplaces.

The laws and by-laws enacted to date are substantially different from each other, although the underlying principles are very similar. This section of the report contains a review of all existing U.S. legislation and an assessment of its effectiveness so far. A tabular summary of the legislation can be found in Exhibit 1.

6.1.1 Reasons for Adopting Right-to-Know Legislation

Right-to-know laws have been passed largely as a result of strenuous lobbying and advocacy by environmentalists, community groups, and unions. The basic principle advocated by these groups is that employees and the public should have the right-to-know the identity of hazardous chemicals they are exposed to, so they can take the appropriate steps to protect their well-being.

Advocates of right-to-know legislation in the U.S. have claimed that it has the following benefits:

- Health professionals can diagnose and treat illnesses related to toxic exposures more accurately;

- Firefighters are in a better position to protect themselves when fighting fires and will be able to adopt the appropriate strategies for controlling chemical fires, thus minimizing property losses and threats to human life;

- Land use planners can make more rational zoning recommendations (e.g., not locating residential areas close to industries using large amounts of hazardous chemicals);

- Local residents can assess the presence of hazardous chemicals in industries and businesses located in their neighbourhoods more accurately, and if necessary, take action to lessen the effects of exposure;

- Employees can advocate for healthier working conditions more effectively if they are aware of the hazardous chemicals they are exposed to;

- Government officials, such as occupational health and safety inspectors, can enforce other legislation for chemicals more systematically if they know the specific chemicals handled by industries and businesses within their jurisdictions.

Although right-to-know legislation would seem to have considerable benefits, many U.S. industries argue that it conflicts with the principle of trade secrecy. This can be defined as the right not to disclose any information which could lessen or remove the competitive advantage retained by an individual or company if the information were kept secret. Companies are also concerned that they will be forced to incur considerable costs to meet the requirements of right-to-know legislation, and that there may also be indirect costs once employees and the public have access to information about hazardous chemicals.

6.1.2 Factors Contributing to Legislation Being Passed in the U.S.

Many factors have contributed to the enactment of right-to-know legislation in the U.S. Some are common to many states and municipalities, while others are unique to a particular jurisdiction. Common factors include the organization of unions, community groups and environmentalists to work together for a common goal. Rarely, if ever, have these three groupings come together to advocate and lobby for a single cause. Other shared factors include the perceived benefits of such legislation. These have been outlined in Section 6.1.1 above.

As well as common factors, there are also those unique to particular jurisdictions. For example, California's right-to-know law was enacted in the wake of scandals surrounding the use of dibromochloropropane (DBCP) (1). Extensive hearings concluded that employees at the Occidental Chemical Company in Lathrop, California, handled DBCP without receiving information about its potentially harmful effects, which include male sterility and cancer. The law was based on a legislative finding that "employers and employees have a need to know the properties and potential hazards of substances to which they may be exposed, and that such knowledge is essential to reducing the incidence and cost of occupational diseases".

In Philadelphia, residents of the Bridesburg area were concerned about persistent problems with industrial air pollution and at the same time health data suggested that there was an unusually high mortality rate from cancer, particularly in the industrialized areas of the city (2). This led to a conference on hazardous chemicals, which eventually contributed to the passage of the Philadelphia by-law. High cancer mortality rates

were also cited as a reason for enacting right-to-know legislation in Cincinnati (2).

Specific examples, where a knowledge of hazardous chemicals could have averted an accident or health problem, have been used by right-to-know advocates. Such examples include an accident involving unlabelled PCBs near Billings, Montana, where a spill was cleaned up using a water hose which in turn contaminated thousands of chickens (the Montana right-to-know bill was eventually defeated in the state senate). Other examples include instances where health effects could have been avoided. The Michigan right-to-know task force cites a warehouse employee who is now permanently disabled as a result of inhaling toxic fumes whose identity he was unable to ascertain from his employer. Other right-to-know coalitions have used other examples of employees who have suffered permanent health effects as a result of exposure to unknown chemicals. Advocates of right-to-know hope that legislation will avoid such mishaps in the future by acting as a preventive measure.

6.2 DIFFERENT TYPES OF RIGHT-TO-KNOW LEGISLATION

6.2.1 Municipal and State Legislation

In the U.S. both municipal and state right-to-know laws have been passed. Initially, right-to-know legislation was predominantly municipal, with Philadeplphia being the first city in the U.S. to enact such a law. Now, the trend appears to be away from municipal legislation and toward state legislation, because experience has shown that there are difficulties associated with implementing the many local by-laws. It is usually much simpler and considerably cheaper to adopt uniform state-wide legislation rather than have many different local ordinances. In fact, it is simpler and cheaper not only for the enforcing government agency, but also for the industries and businesses involved.

A similar argument has been made for adopting federal legislation in the U.S., but the proposed Chemical Hazard Communication is considerably less stringent than many municipal and state laws (see Exhibit 2). This is not the case where legislation has been enacted at both municipal and state levels in the same jurisdiction. This has occurred particularly in California where both sets of legislation seem to be compatible and co-extensive with each other, and there is little disagreement (3). This is in contrast to the expected predicted relationship between state legislation and the proposed federal Chemical Hazard Communication.

Although there are disadvantages to local laws, there are also advantages. Employees and members of the public are likely to

access information on hazardous chemicals more easily if it is locally available. In addition, it may be easier to enforce inspection programs at the local level than at a state or federal level, because local government officials will probably have a better knowledge of industries and businesses within their jurisdiction than state officials who are geographically remote from plants and factories.

6.2.2 Employee Right-to-Know and Public Access Legislation

Right-to-know legislation in the U.S. falls into two categories: firstly, those laws which provide employees only with the right-to-know which hazardous chemicals are being used by their company; and secondly, those laws which allow public access to information on the hazardous chemicals within the relevant jurisdictional area. Obviously, public access legislation is much more comprehensive than an employee right-to know, and employees are obviously included in public access legislation.

Public access laws in the U.S. have several advantages over employee right-to-know laws. Under public access laws, neighbourhood residents, firefighters, health professionals and land use planners, as well as employees, have access to information on hazardous chemicals. In addition, public access laws enable non-unionized employees to obtain information about their own workplaces, without having to ask their employers directly, thus avoiding the possibility of retaliation.

The main disadvantage to public access legislation is that employers may wish to restrict information about the hazardous chemicals being used in a particular workplace. Providing information to employees only could be seen as a means of partially protecting trade secrets, as employees are not likely to divulge information to a competing company.

In the U.S., most right-to-know laws do not contain provisions for public access to information on hazardous chemicals. The most notable exception are Cincinnati, Philadelphia, Sacramento, New Hampshire, and New Jersey, all of which do include public access provisions. However, in the future this can be expected to change, because the federal Chemical Hazard Communication (see Exhibit 2) may preempt many employee right-to-know laws. This communication is considerably less stringent than many existing laws, and so to regain authority and have their more stringent legislation enforced, many states could enact public access laws, which would inevitably include employees.

6.3 REVIEW OF U.S. RIGHT-TO-KNOW LEGISLATION

6.3.1 Implementation and Enforcement

Industries covered by legislation

Right-to-know laws can either apply to every business, industry and government agency or they can exempt specified groups.

Many states and municipalities, such as Minnesota and Massachusetts, exempt research laboratories, and some exempt hospitals as well. This is because employees in these facilities are presumably more familiar with the hazards of chemical exposure than most other employees.

In Philadelphia, dry cleaners are exempt from reporting air emissions because they usually release the same substances.

In New York, Alaska and Illinois, domestic workers are exempt, presumably because it would be difficult to enforce legislation in private homes.

Agricultural workers are excluded in West Virginia, and less information is available to them in Wisconsin.

Reporting requirements where they exist, can be restricted to particular types of industry. For example, in Michigan requirements are virtually limited to the chemical industry. One approach which appears to be successful is to designate industries on the basis of their Standard Industrial Classification (SIC) code. This is done in New Jersey and includes industries classified as manufacturing, transportation or repair businesses, as well as health care services and government agencies.

Most U.S. legislation exempts retail stores from reporting the presence of hazardous chemicals for retail sale. In Philadelphia, however, stores are required to report chemicals in non-consumer products used by employees.

Another procedure which effectively exempts some businesses and industries is that of exempting small quantities of hazardous chemicals from reporting requirements. This is discussed in a later section.

Chemicals covered by legislation

The U.S. experience with right-to-know suggests that it is inappropriate for each jurisdiction to develop its own list of reportable hazardous chemicals. Instead, several pre-existing lists have been adopted into most statutes and ordinances. The most notable exception is Philadelphia, where companies must

report air emissions of 99 chemicals identified from a list of known or suspected carcinogens developed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Many right-to-know laws, including those of Philadelphia, Cincinnati and Connecticut, require industries to report approximately 450 substances covered by the U.S. Occupational Safety and Health Administration (OSHA) regulations in Title 29 of the Code of Federal Regulations (CFR), Part 1910, Subpart Z. The tables of hazardous chemicals in Subpart Z include substances for which OSHA has adopted standards. Subpart Z also includes more than 20 additional substances which are covered separately by individual OSHA regulations. A list of the chemicals covered by Subpart Z is included in Exhibit 3.

Other lists of hazardous chemicals which have been used include the National Institute for Occupational Safety and Health's (NIOSH) 'Registry of Toxic Substances'; the International Agency for Research on Cancer's (IARC) list of human and animal carcinogens; chemicals regulated in the U.S. Clean Water Act or the U.S. Clean Air Act; the Department of Transportations's 'Hazardous Materials Table 49' (CFR 172.101); and the Department of Health and Human Services' 'Second Annual Report on Carcinogens'. The most comprehensive list is the NIOSH registry, usually abbreviated as the RTECS list, which contains approximately 57,000 chemicals.

In several instances two or more lists have been combined. For example, the Maine law covers the OSHA regulations (Title 29, Part 1910, Subpart Z) and the Department of Transportation's list of hazardous materials (Table 49 CFR 172.101).

The OSHA list is the most frequently used in right-to-know legislation. This is because the chemicals listed are already regulated, so U.S. employers are already responsible for knowing whether or not they have any of these substances on their premises. Therefore a right-to-know law requiring them to report on these chemicals adds little extra work.

Reporting requirements

Some right-to-know laws require industries to report on which legally designated chemicals they have on their premises. This is the case particularly for public access legislation, although it is also true to a lesser extent for employee only legislation. When reporting is stipulated, it is often required on an annual basis. Some requirements specify that a list of the designated chemicals present should be returned to the enforcing agency, while others specify that a Material Safety Data Sheet (MSDS) should be completed and sent to the enforcing agency for each chemical named in the legislation. Some right-to-know laws require each business or industry to supply the MSDS for each

reportable chemical, others require that a government agency complete the MSDS. An MSDS can also be required for mixtures of chemicals.

An MSDS should include the following information:

1) product name, chemical name, trade name, and manufacturer;

2) hazardous ingredients;

3) physical data, including appearance, boiling point, and vapor density;

4) fire and explosion hazard data, including flashpoint and special firefighting procedures;

5) health hazard data, including effects of overexposure and emergency first aid procedures;

6) reactivity data, including materials with which the product is incompatible, and other information about conditions that could cause a product to react hazardously;

7) spill or leak procedures, including clean-up measures and waste disposal methods;

8) special protection information, including the use of respiratory equipment, flush, ventilation and other measures that should be taken when handling the material; and

9) special precautions, including those to be taken during storage.

Unfortunately, MSDSs are sometimes incomplete and do not often contain information about the health effects of chronic exposure to chemicals.

Enforcing government agencies

The enforcing government agency is responsible for implementing the legislation. When this involves public access to information the agency is also responsible for developing, and maintaining the necessary information systems, as well as ensuring reasonable access to its services.

Most U.S. right-to-know laws are enforced either by the State Department of Labour (or equivalent) or the State Department of Health (or equivalent). In some cases, particularly when the legislation is municipal, the Fire Department is the enforcing agency. In Philadelphia, both the local fire and health departments enforce the by-law. Although this approach has the advantage of maximizing the use of available resources and

personnel, it requires good coordination and communication between the agencies involved.

There is no relationship between the type of legislation (i.e., employee only or employee and community) and the enforcing agency. It could have been expected that labour departments would enforce employee right-to-know legislation, and that health departments would enforce community right-to-know legislation. However, this is not the case, and there is no apparent pattern in the selection of enforcing agencies. It is more likely that enforcing agencies have been chosen because of their pre-existing authority to regulate toxics and/or their expertise in this area.

Compliance with legislation

There is little information available on compliance with right-to-know legislation. Generally, the emphasis is placed on employees and the public to use and enforce the legislation, rather than on mandatory inspections by the enforcing agency. So businesses are penalized if they do not provide the required information. Inspection requirements are not included in many laws. Despite this, only a few states have provisions that enable private citizens or employees to institute court actions directly against a business. This is the case in Minnesota and Connecticut (for reproductive hazards only). In other states and municipalities with right-to-know legislation, a legal action can only be initiated by the enforcing agency.

Some laws, for example New Hampshire's, do authorize the representatives of the enforcing agency to enter, inspect and take samples of substances, if there is reason to believe a violation of the law has occurred. In other cases where right-to-know legislation has been incorporated into existing laws (for example, Philadelphia) such rights of inspection may already exist. There is, therefore, no need to include them in the new right-to-know legislation.

Most legislation includes provisions for statutory fines, which vary in amount from $100 to $10,000, although there is no information available on how often fines have been levied. Some enforcing agencies have the authority to levy fines without the need for court action. A few states have no financial penalties for non-compliance (for example, Michigan and Connecticut).

Another form of penalty can be the suspension of permits necessary to store or handle hazardous chemicals. Some laws require employers to obtain such permits, and these, in effect, empower the licensing agency to suspend a permit wherever its conditions are violated. There is no information available on the types or numbers of permits withdrawn.

6.3.2 Access to Information

Confidentiality of trade secrets

Many municipal and state right-to-know laws contain provisions for the confidentiality of trade secrets, so that industries can protect their proprietary information. However, even with the trade secrecy provisions, employers are often required to provide the confidential information to the enforcing agency. Thus, such provisions only limit the enforcing agency from disclosing information to the public.

Different jurisdictions have different provisions. Some, such as West Virginia, Maine and Michigan, have no provisions for confidentiality. Others require industry to prove to an arbitration board why a chemical's identity should be withheld. In Cincinnati, industries have to demonstrate that the chemical's identity is unknown to competitors and cannot be discovered by chemical analysis. In Connecticut, the enforcing agency determines whether a company's claim to confidentiality is valid. If the claim is upheld, the chemical is given a Trade Secret Registry Number and information about the substance (excluding its chemical identity) is provided to the public.

Confidentiality of trade secrets is usually one of the main arguments against right-to-know legislation, but often when confidentiality clauses are included, they are rarely, if ever, applied. For example, in Philadelphia an employer must demonstrate why a chemical's identity should be regarded as a trade secret, but only three claims have been approved (to 1984).

Labelling requirements and exemptions

Most U.S. right-to-know laws require some form of labelling for containers of reportable chemicals. Some laws require the MSDS to be posted, while others require just the chemical name to be posted. Maine, Connecticut, Minnesota, Rhode Island, New Jersey, Illinois and Massachusetts specify that labels should be posted, while West Virginia, Wisconsin, New Hampshire and Alaska require that MSDSs should be posted.

Some right-to-know laws exempt small quantities of chemicals either from being reported to the enforcing agency, or from labelling requirements for containers. For example, Philadelphia's legislation requires labelling of containers larger than 55 gallons or 500 pounds (with its Chemical Abstract Service Registry Number). Cincinnati requires labelling of any containers for reportable chemicals containing more than one gallon. Other legislation, such as New Jersey's, requires employers to label all containers. Most legislation requires reporting and labelling of all chemical carcinogens, mutagens and teratogens.

Some U.S. groups have discussed provisions which would require industries and businesses to submit maps showing the locations of containers within workplaces. Such provisions, however, may be difficult to implement and enforce because containers are frequently shifted during manufacturing processes. Advocates of this proposal argue that this information would be particularly useful for firefighters.

Education programs and information dissemination

Most U.S. right-to-know laws require businesses and industries to keep information on file to respond to employee requests. For public access right-to-know laws, such as Philadelphia's, employers send information to government agencies which then respond to public requests, including those of employees.

In addition, many right-to-know laws specify that education and training programs should be established to familiarize employees with the dangers of hazardous chemicals. Such programs are required by New York, California, Wisconsin, Maine, Connecticut, Cincinnati, Minnesota, New Hampshire, Rhode Island, New Jersey, Illinois, Alaska and Massachussetts.

6.3.3 Costs and Financing of Right-to-Know Legislation

The costs of right-to-know legislation in the U.S. have varied according to the type of legislation. Generally, employee access to information legislation is cheaper than public access legislation. This is because public access requires that an information dissemination system be developed and made available, while employee legislation may not require the same degree of sophistication. But although initial costs for public access may be higher, in the long-term they may be comparable with employee only legislation.

Other factors which can contribute to the costs include requirements for training and educational programs, and whether the enforcing agency has to collect and complete Material Safety Data Sheets (or equivalent). Training and educational requirements are particularly common in employee access to information legislation. For example, the Minnesota Association of Commerce and Industry estimated that initial costs of training employees according to the requirements of the Minnesota state law would cost an "average" company of 100 employees between $10,000 and $80,000. Similarly, the Chemical Industry Council of New Jersey estimated that it will cost the state between $2,000 and $3,000 each to prepare hazard data sheets for some 2,000 chemicals.

The costs of developing and maintaining a public access information system have been estimated by the Golden Empire

Health Systems Agency in California (3). For 800 users per annum, it was estimated that first year costs would be between $20,000 and $87,000 and second year costs between $5,000 and $31,000, depending on the sophistication of the system required. These costs are in 1982 U.S. dollars and do not include any costs for enforcement, inspection, training or educational programs.

Actual costs of right-to-know legislation have varied. The initial costs in Philadelphia were slightly less than $1 million, including $600,000 for computer-related expenses and $300,000 for personnel (2). In New Jersey the law appropriated $1.7 million for a "Worker and Community Right-to-Know Fund" which is to be repaid with interest from fees levied on employers. Under the right-to-know law in New York State the Department of Health received $200,000 and the Office of the Attorney General $50,000 for the first two years after the law was passed. The program is now funded out of each department's regular budget. The New Jersey and Philadelphia laws include provisions for public access, New York's does not.

Some U.S. right-to-know laws are financed by charging industries and businesses fees for 'hazardous chemical permits'. In other cases, funding is not limited to the licensing fees but includes a budgetary allocation. Sometimes, laws are exclusively financed by budgetary allocation, with no fees levied at all.

In Philadelphia, there is a fee structure that requires industries to pay the same amount, regardless of the size of the company or the number of chemicals handled. A sliding fee dependent on the size of the workplace may be more realistic (a system based on the number of chemicals could encourage under-reporting).

6.3.4 Transportation of Hazardous Chemicals

Many U.S. communities are concerned about hazardous chemicals being transported through them. But, right-to-know legislation has rarely been advocated as an answer to these concerns because the identity of each shipment would have to be reported, causing large amounts of paperwork as well as enforcement problems, which would restrict commercial activity.

Despite these problems, Philadelphia's legislation requires the disclosure of the identity and health hazards of reportable chemicals moving through the city. No enforcement plan was ever developed for this section of the legislation, so it has not been implemented to date (1984).

Another approach is to regulate or restrict shipments of hazardous chemicals. However, the U.S. Department of Transportation is questioning the constitutionality of such laws,

claiming that they restrict interstate commerce. Although the legality has yet to be determined, approximately 182 cities, counties and states ban or restrict nuclear shipments, and only one of these statutes has been challenged in court, to date. Dallas, New York City and Boston have passed regulations protecting downtown areas from hazardous chemicals, and in New York and Boston challenges to these regulations have been successfully defeated.

6.4 ARGUMENTS USED AGAINST THE RIGHT-TO-KNOW AND COUNTER-ARGUMENTS FROM ENVIRONMENTAL, EMPLOYEE AND COMMUNITY GROUPS

6.4.1 Confidentiality of trade secrets

Many U.S. manufacturing industries in jurisdictions where right-to-know legislation has been proposed feared that competitors would gain access to their trade secrets, thereby removing their competitive advantage.

The usual response to this argument is that industrial competitors can already identify most of the chemical components of any given product by chemical analysis, although they may not be able to identify the quantities, or original ingredients involved . Therefore, in practice the principle of 'trade secrecy' does not work any more. In any event, it is still possible to patent new chemicals, and prevent them from being used by competitors.

Sometimes industries state that there is no need to supply chemical names and that information about whether a substance is hazardous or not and on the nature of the hazard should be sufficient. This is because it is felt that employees and community residents do not have sufficient expertise to review the relevant scientific literature and assess the extent of the possible hazards posed by exposure to particular chemicals.

While this may be true initially, providing employees and community residents with chemical names allows them to learn new skills, and recognize the same chemical the next time they use it or are exposed to it. Also, knowing the chemical name, independent third parties (with scientific expertise) can be requested to ensure that the hazard information supplied is as complete as possible. This is likely to lead to the employee or resident trusting the information more than if it were compiled and supplied by the company alone. In extreme cases, it would be possible for companies to withhold hazard information if they alone knew the chemical identity of a particular hazardous substance.

Some right-to-know laws include provisions for an arbitration board to decide what constitutes a trade secret. These boards are often composed of representatives from industry, unions and the enforcing agency, and represent a compromise between full disclosure and the right of secrecy.

6.4.2 The Relationship Between Right-to-Know Legislation and the Economy

Opponents of right-to-know often assert that such legislation will be detrimental to the economy. This is based on the perception that more environmental regulations will increase industrial costs, which will in turn lead to increased prices, which will contribute to decreased demand, industrial plant closures and eventually the loss of jobs.

Studies have shown that environmental and consumer legislation has only contributed marginally to the cost of manufactured goods. In 1976, Chase Econometrics (Chase Manhattan Bank's economic forecasting company) completed a study which showed that pollution control measures increased the U.S. Consumer Price Index (CPI) by only 0.3 to 0.4% a year. A later study (1979) by another U.S. company, Data Resources Inc., suggested that pollution control measures added only 0.2% to consumer prices annually. Also in 1979, the U.S. Council on Wage and Price Stability estimated that all government regulations added only 0.75% a year to consumer prices. Therefore, it seems unlikely that right-to-know legislation has significantly affected the pricing policies of manufacturing and other industries.

Although the evidence presented above is circumstantial, direct evidence about the relationship between right-to-know legislation and the economy does not exist at present. Right-to-know legislation is such a recent phenomenon in the U.S. and it is too early to judge its effects on pricing policies, plant closures, and job losses. Preliminary evidence does not show any substantial effect on local or state economics.

6.4.3 Does the Community Really Have a Right-to-Know?

Some employers in the U.S. have agreed that while they will provide information to their employees, they do not feel that community residents have an equivalent right to know what hazardous chemicals may be stored, used, manufactured, or disposed of by an industry in their neighbourhood.

This argument is similar to the 'confidentiality of trade secrets' argument mentioned above. Just as individuals have the right of privacy in their own homes, it is felt that industries too, have a right to privacy about how they conduct business.

The response to this point of view is often that industries are not isolated from the rest of a community. They can release hazardous chemicals into both water and air, the two shared resources essential to life. There is evidence that a small proportion of lung cancers are associated with exposure to industrially produced chemical carcinogens, and dumping of

industrially produced hazardous wastes in the U.S. has been linked to contaminated ground water. In addition, employees can transport hazardous chemicals from their homes on their clothes and skin, thereby exposing family members.

6.4.4 'Safe' Levels of Exposure to Potentially Hazardous Chemicals

It has been suggested that if employees or community residents are aware they are being exposed to potentially hazardous chemicals, they will oppose any exposure to the chemicals in question. It is felt that this is because they are unable to distinguish between 'safe' and 'dangerous' levels of exposure.

Obviously, the toxicity of a chemical will depend on both the amount present and its concentration, and exposure to almost any chemical in huge amounts and at very high concentrations can be hazardous, but it may not always be valid to assume that relatively small exposures are free from any risks to health. 'Safety' can be taken to mean that there is no risk of developing adverse health effects, and for some chemicals threshold concentrations have been identified, below which there is thought to be no risk of adverse health effects. For other chemicals, mainly carcinogens, it is generally accepted that there is no concentration (except zero) at which the risk is zero, and that the risk is proportional to the exposure. Therefore, it becomes important to decide what level of risk is tolerable, so that exposure levels can be judged as acceptable or not. Of course, employees, community residents and industry may not agree on what is an acceptable level of risk.

Environmental and community groups and unions in the U.S. argue that individuals (either employees or community residents) exposed to risks on an involuntary basis, such as contaminated air or water, should at least have access to information about that risk. This should include the right-to-know the identity of the chemical causing the risk, information about the size of the risk and the potential health effects of exposure, if this is available.

6.5 EFFECTS OF ENACTING RIGHT-TO-KNOW LEGISLATION

In order to assess the effects of right-to-know legislation in the U.S., a survey of states and municipalities with right-to-know legislation was undertaken. The following questions were included in the survey:

1. What was the response of industries located within your jurisdiction (for example, were there any plant closures, increased prices or jobs lost, that you are aware of)?

2. What was the response of community, environmental and labour groups (for example, do they now feel they have achieved their goal)?

3. What is your position on the success of the legislation (for example, have there been any unforeseen administrative problems, and if so what were they)?

4. In your opinion, has right-to-know legislation made a significant contribution to the primary prevention of health problems related to chemical exposure (for workers, and if appropriate, community residents)?

Eighteen letters were sent out; fifteen to states and three to municipalities. Eleven responses were received; ten from states and one from a municipality. Eight of the responses directly addressed some or all of the questions above.

Respondents' general comments

Nearly all the respondents commented that because right-to-know legislation is such a recent phenomenon in the U.S., it would be premature to evaluate its success or otherwise. Bearing this in mind, the following interim comments were made.

Question 1 - Industry's response

All eight respondents who answered the survey questions reported that they were unaware of any plant closures, jobs lost or increased prices in their jurisdiction as a result of right-to-know legislation. Indeed, a representative of the New Hampshire Department of Labor commented that "the response from industry to comply with this law has been positive", and similarly the Commissioner of Labor in Connecticut stated that "the response from industry has been good". The Director of Labor Standards, Maine, replied that the law helped employers gain access to information held by chemical suppliers and has made these employers aware of health problems that could be associated with some of the chemicals used by their employees.

There were, however, difficulties mentioned in two letters. Firstly, some industries in Minnesota were concerned that they wouldn't be able to meet the compliance deadline set, and secondly, special assistance was necessary for small businesses not exempted from the New York legislation (this may be because the New York legislation uses the NIOSH RTECS list of approximately 57,000 chemicals). A representative of the Health Department from the same state commented that many large

companies had been using Material Safety Data Sheets in their own safety programs for many years and therefore the law had no additional impact on them.

Question 2 - Community, environmental and labour groups' response

The respondents reported that these types of groups had been instrumental in the passage of right-to-know legislation. For those jurisdictions with employee only legislation, unions were generally satisfied with the resulting law, as were all three types of groups where comprehensive (employee and community) legislation had been enacted. In several cases, representatives of these groups were working with legislators to improve the original right-to-know laws.

Question 3 - Government response

All of the respondents spoke favourably about right-to-know legislation, but most had also experienced problems with financing, implementation and feedback about the new law.

Several respondents stated that the main difficulty was financing the legislation. A representative of the City of Cincinnati commented that financing was required for more inspectors and clerical personnel to undertake field work and office duties, and also to computerize the accumulated hazard information. Budgetary restraints were cited as affecting implementation of the Connecticut right-to-know law.

The second problem identified was the difficulty of implementing right-to-know legislation. A representative of the Rhode Island Department of Labor stated that a series of amendments were necessary to their original right-to-know law because of problems interpreting the language used. Similarly, there are also amendments necessary to the Minnesota legislation because of limiting and inconsistent language.

The third problem identified was that because neither reporting nor inspection requirements were included in some right-to-know legislation (particularly for employee only legislation), the responsible government agency had no knowledge of compliance with the law, its effectiveness, or how much it was being used. This was particularly emphasized by a representative from New York's Department of Health who stated that because enforcement of the law is based on complaints received by the Department, employees who have no knowledge of the law cannot exercise their right to information.

Question 4 - Primary prevention of health problems

Several of the survey respondents were of the opinion that an assessment of the public health benefits of their right-to-know

legislation was premature. Several others responded that they thought the legislation would contribute to the primary prevention of health problems associated with exposure to hazardous chemicals. A representative of the Maine Department of Labor commented that their law enabled employers to gain access to health and safety information on chemicals from the suppliers that they had been unable to obtain previously, and that as a result employers were becoming much more knowledgeable about possible health hazards to their own employees.

References to Section 6

1. Worobec, M.R. Chemical Right-to-Know Requirements: Federal and State Laws and Regulations. A Status Report. Washington D.C., U.S. Bureau of National Affairs. 1984.

2. Chess, C. Winning the Right-to-Know: A Handbook for Toxic Activists. Philadelphia, Delaware Valley Toxics Coalition, 1984.

3. Sherry, S. and Purin, R. Hazardous Materials Disclosure Information Systems. Sacramento, California, Golden Empire Health Systems Agency, 1983.

Exhibit 1

Key to Table

1. EFFECTIVE DATE(S) : When does (did) the legislation go into effect?

2. SUBSTANCES COVERED

   Chemical List : What substances are covered?

   Ability to Expand : Can coverage be expanded to new chemicals as data become available?

   Non-Chemical Hazards: Are non-chemical hazards covered?

   Addresses Mixtures : Are mixtures and trace quantitites of toxic substances covered?

3. TRADE SECRET PROVISIONS

   Disclose to Health Professionals : Are employers and manufacturers required to disclose trade secrets to health professionals?

4. CHEMICAL INFORMATION AVAILABLE

   Label : Does the standard require labelling of containers in the workplace?

   MSDS Posted : Are employers required to post Material Safety Data Sheets in the workplace?

   MSDS from Employer : Can employees obtain an MSDS from their employer?

   MSDS from Government: Can employees obtain an MSDS from a government agency?

   Education and Training : Does the law require employers to conduct a general training and education program on toxic substances for employees handling toxic substances?

5. WORKERS' RIGHTS

Exemptions	:	Are certain rights exempted?
Posting of Rights	:	Are employers required to post employees' rights in the workplace?
Refusal	:	Does the employee have the right to refuse to work with an unknown material if the employer is not forthcoming with a Material Safety Data Sheet?
Anti-discrimination	:	Is he/she protected against discriminatory retaliation?
Designated Representative	:	Can a union exercise these rights on the employees behalf?

6. COMMUNITY RIGHTS

Public Access	:	Does the community have access to this information?
Report Environmental Release	:	Are employers required to report releases of toxic substances into the environment?
Disclose Old Dumpsites	:	Are employers required to disclose where they have been dumping their wastes for the past 30 years?

7. ENFORCEMENT

Penalties	:	Does the law provide for dollar penalties against employers who fail to comply?
Citizen/Worker Lawsuits	:	Are employees or community residents empowered by the law to file civil suits against industries that violate the right-to-know?

1	2					3		4						5					6			7		
	Effective	Substances Covered				Trade Secret Provisions		Chemical Information Availat						Worker's Rights					Community Rights			Enforcemen.		Government
Legislation	Date(s)	Chemical List	Ability to Expand	Non-Chemical Hazards	Addresses Mixtures		Disclose to Health Professio	Label	MSDS Posted	MSDS from Employer	MSDS from Govt.	Educati and Trainir	Exemptions	Posting of Rights	Refusal	Anti-discrim.	Deleg. Rep.	Public Access	Report Env. Release	Disclose Old Dumpsites	Penalties	Citizen Worker Lawsuits	Agencies Empowered
NEW YORK Chapter 551, Act 48 (NOT An 28 DOL	June 25, 1980	RTK S	YES	Positive evidence of hazard	NO	State may release after 30 day notice	NO	NO	NO	YES	YES	YES	Domestic workers	YES	YES	YES	YES				Up to $10,000 civil fines Criminal violations	NO	Bureau of Toxic Substance Assessment, N Y State Dept. of Health Albany, N Y 12237
CALIFORNIA Chapter 2 5 (A Labor Code)	February 21, 1983	EPA-CWA, CAA Cal OSHA Lis IARC 1980 substances)	YES	Exempts employers not in final product	YES	Employer may seek declaratory judgement to stop release	NO	NO	NO	YES	NO	YES		YES	NO	YES	YES				Cal OSHA schedule of fines	NO	Cal OSHA 525 Golden Gate Ave San Francisco, CA 94102
WEST VIRGINIA Hazardous Chemical Disclosure Act	July 1981	OSHA 1910 Subpart Z with adds	YES	NO	NO	NONE	NO	NO	YES	NO	NO	NO	Const. ag horticul industries	NO	NO	NO	NO				$100 - $1,000	NO	Commissioner of Labor State Capitol Charleston, W Va 2531
WISCONSIN Ch 168 Laws of 1981, 101 36 and 101 39	December 1, 1982	OSHA 1910 Subpart Z	NO	YES Information agents	Exempts compounds of mixtures present at less than 1% Exposures less than 2% also exempt	Information withheld from employers must be reported to the state YES		NO	YES	YES	NO	YES	Less info available to agric workers	YES	YES	YES	YES				Up to $1,000 per violation	NO	Dept of Industry Labor and Human Relations 201 E Washington Ave Madison, WI 53702
MICHIGAN Act No 51 of 1980	1980	Not specified	NO	NO	YES	NONE	NO	NO	NO	YES	NO	NO	Potentially limited to the chemical industry	NO	NO	NO	NO					NO	Dept of Labor Leonard Plaza 309 N Washington Box 30015 Lansing, MI 48909
MAINE Ch 500 H P 1100 L D 1580	January 1, 1989	DPT 49, CFR 1°2 101 OSHA 1910 Subpart Z	NO	NO	NO	NONE	NO	YES	NO	Limited	NO	YES		NO	NO	NO	NO				NONE	NO	Bureau of Labor State House Station 54 Augusta, ME 04333
CONNECTICUT Information & Training Public Act 82-251	July 1, 1983 (Jan 1, 1984 reporting requirements)	OSHA 1910 Subpart Z (except tox regmts)	NO	NO	NO	Information withheld from employers must be reported to the state	NO	YES Supplier's duty	NO	YES	YES Under state FOIA	YES	NONE	YES	YES	YES	YES	YES Under state FOIA	NO	NO	NONE	NO	Commissioner of Health Services 79 Elm St Hartford, CT 06106
CONNECTICUT Carcinogens Ch 55° P A 80-257		OSHA 1910 Subpart Z (carcinogens with adds)	YES	NO	NO	NONE	NO	YES Supplier's duty	NO	NO	NO	YES	NONE	NO	NO	YES	NO					NO	Commissioner of Labor 200 Folly Brook Blvd Wrethersfield, CT 06109
CONNECTICUT Reproductive Hazards P A 81-251	October 1982	Any chemicals toxic substances substance materials or other substances used or produced that might endanger the reproductive system of users or the fetus				NONE	YES New and current employers must be told of any teratogens or reproductive system hazard in workplace as the information becomes available	NO	NO	NO	NO	YES	NONE Pre-employment or pre placement questions pertaining to reproductive health are prohibited unless directly related to job performance	NO	YES	YES	YES Prohibits company policies that require workers to get sterilized in order to keep their jobs				NONE	YES	
CINCINNATI Right to Know Ordinance Ch 3295 of Municipal Code	1/84 (Less than 25 employees) 7/83 (25-250 employees) 8/83 (Construction) OSHA 3/83 (Over 250 employees)		YES	NO	Trace quantities less than 1% are exempt	Employer must disclose to Fire Chief and state showing to grant it in a trade secret	YES	Limited	NO	YES	NO	YES	Some labs less than one gal	YES	NO	YES	YES	YES	NO	NO	Up to $500	NO	Chief Charles Collins Fire Prevention Bureau Cincinnati, OH 45202
PHILADELPHIA Toxic Substances and Threat from Chemical Emissions	June 11, 1981	Fire Dept and Health Dept list An Pollutants Control Board list of 99 YES or substances	NO		"Any material or mixture deemed hazardous by Fire Dept"	Employers must show cause to back claim May not withhold environmental emissions data YES	NO	NO	NO	YES On file at local fire dept	NO		Use less than 500 lb or 55 gal of a toxic substance	NO	NO	NO	NO	YES	YES	NO	Revoke license to store haz materials	NO	Dept of Licenses & Inspections 15th & JFK Blvd Phila, PA 19107
SACRAMENTO Hazardous Material Disclosure Ordinance ord 89	May 29, 1985	Cal OSHA NIOSH EPA Waste Stream Code of Waste	YES	NO	Adopts state language	Employer may seek dec. statory judgement to stop release	To meeting jurisdiction	NO	NO	NO	YES	NO	Use less than 500 lb or 55 gal of a toxic substance	NO	NO	NO	NO	YES	YES	NO	Violations deemed a "nuisance" - City Attorney may take action	NO	Fire Prevention of 1 St Sacramento, CA

EXHIBIT 1

1	2				3		4					5					6			7		
LEGISLATION	EFFECTIVE DATE(S)	SUBSTANCES COVERED				TRADE SECRET PROVISIONS	CHEMICAL INFORMATION AVAILABLE					WORKER'S RIGHTS					COMMUNITY RIGHTS			ENFORCEMENT		GOVERNMENT
		Chemical List	Ability to Expand	Non-Chemical Hazards	Addresses Mixtures	Disclose to Health Professios	Label	MSDS Posted	MSDS from Empl.	MSDS from Govt.	Education and Training	Exemptions	Posting of Rights	Refusal	Anti-discrim.	Desig. Rep.	Public Access	Report Env. Release	Disclose Old Properties	Penalties	Citizen/ Worker Lawsuits	AGENCIES EMPOWERED
ILLINOIS Public Act 83-240 H 741, 1983	January 1, 1984	OSHA 1910 Subpart Z DB SHMS - HTP	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	Domestic or casual workers. Fewer than 20 employees or 5 full-time. Research labs.	Yes	Yes	Yes	Yes	No	No	No	$1000 per violation. $10,000 per willful violation. State may also seek punitive damages.	No	Dept. of Labor 104 W. La Salle St. Chicago, IL 60601
ALASKA	July 1, 1983 for state July 1, 1984 for employer	OSHA 1910 Subpart Z ACGIH	Yes	Poss.	No	None	No	No	Yes	Yes	No	Yes	Domestic workers	Yes	Yes	No	No	No	No	No		No	Dept. of Labor Box 1149 Juneau, AK 99811
MASSACHUSETTS Chapter 470 Mass. General Laws H 6710, 1983		Ten lists from various federal and private agencies Total of about 3000 chemicals	Yes	No	Yes	Commissioner of Public Health may require companies to substantiate trade secret claims. Companies may appeal to Superior Court	Yes (M.D.)	Yes	No	Yes	Limited	Yes	Research Labs Under 5 lbs. or 1 gallon	Yes	Yes	Yes	Yes	"Where appropriate"	No	No	Civil penalties up to $250 per day per violation Willful violations deemed "misdemeanors." Up to $1000 per day per violation and/or 90 days in jail	No	Dept. Env. Quality Engineering 1 Winter Street Boston, MA 02111 Dept. Labor & Industries 100 Cambridge St. Boston, MA 02202 Dept. Public Health 600 Washington St. Boston, MA 02111 "Municipal Coordinators" (Usually fir or public health officials)

1	2					3		4				5				6		7		
LEGISLATION	EFFECTIVE DATE(S)	SUBSTANCES COVERED				TRADE SECRET PROVISIONS		CHEMICAL INFORMATION AVAILABLE				WORKER'S RIGHTS				COMMUNITY RIGHTS			ENFORCEMENT		COVE
		Chemical List	Ability to Expand	Non-Chemical Hazards	Addresses Mixtures		Disclose to Health Profession	Label	MSDS Posted	MSDS from Empl.	MSDS from Govt.	Education and Training	Exemptions	Posting of Rights	Refusal	Anti-discrim.	Desig. Rep.	Public Access	Report Env. Release	Disclose Old Dumpsites	Penalties	Citizen/ Worker Lawsuits	AGE EMPO
MINNESOTA Employee Right to Know Act of 1983 H.F. 242 Chapter #316	January 1, 1984 (Right to refuse affective July 1, 1984)	OSHA 1910 Sub-part Z	Yes	Yes	Yes	Manufacturers and employers may register certain information as trade secrets. Commissioner of Labor makes determination	Limited	Yes	May substitute for labeling in some cases	Yes	No	Yes	Medical Researchers, pharmacists, waste haulers, retail stores Small farms: no training Small business: no chemical training	No	Yes	Yes	Yes	No	Yes	No	Up to $1000 per violation Up to $200 civil punitive damages to each aggrieved employee	Yes	Comm Labo Indu Spac 5th Lafa Road St. MN 5 Comm Heal 717 wast Minn MN 5
NEW HAMPSHIRE Worker's Right to Know Act HB 763-FN	October 26,1983	OSHA 1910 Sub-part Z	Yes	Some	Yes	State may release after 30 days notice.	Yes	No	Yes	Yes	Yes (Fire Dept.)	Yes		Yes	Yes	Yes	Yes	Yes (Fire Dept.)	No	No	Up to $2500 per violation	No	Dept Labo 1 Pi bury Conc NH 0 Dept Heal 61 S Stre Conc NH 0
RHODE ISLAND Right to Know Act H5104 Public Laws of 1983 - Chapter 18	September 1, 1983	IARC ACGIH NFPA	Limited	No	Yes	Must substantiate claim to Dept. of Health. MSDS must contain all other info on properties and effects of the substance.	Yes	Yes	May substitute te for labeling in some cases.	Yes	No	Yes	Under 2 gallons or 10 lbs. that are not carcinogens, mutagens or teratogens	No	Yes	Yes	Yes	No	No	No	Up to $5000 per day per violation. Up to one year in jail for willful & repeated violations.	No	Dept Labo 235 made Prov RI 0 Dept Heal 75 D Prov RI 0
NEW JERSEY Worker and Community Right to Know Act P.L. of NS 1983 Chapter 315	For some provisions up to 3 years after bill was signed by Governor. (8/29/83)	"Workplace Hazardous Substances" "Environmental Hazardous Substances"	Yes	No	Yes	State may release after 45 days notice. Employers may not withhold emissions data	Yes	Yes	No	Yes	Yes	Yes	Employees not covered by following SIC codes: 20-39, 46-49; 51,75, 76,80,82, 8	Yes	Yes	Yes	Yes	Yes	No	Yes	No less than $2500 for failure to respond to worker requests for information	No	Dept Heal Box 1 Tren NJ 0 Dept Envi Prot Tren

Exhibit 2

The U.S. Federal Chemical Hazard Communication

(OSHA 3084)

Note: 'Hazard' is defined in the Code of Federal Regulations 29 1910, Subpart Z (Toxic and hazardous substances, U.S. Occupational Safety and Health Administration) and in Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment (American Conference of Governmental Industrial Hygienists).

1. Description of Chemical Hazard Communication

The purpose of the Chemical Hazard Communication is to establish uniform requirements to ensure that the hazards of all chemicals produced, imported or used in U.S. manufacturing industries are evaluated, and that this information is transmitted to affected employers and employees. Manufacturing industries are defined as industries with Standard Industrial Classification (SIC) codes 20-39.

Chemical manufacturers and importers will be required to convey information about hazardous chemicals to 'downstream' employers by means of labels on containers and Material Safety Data Sheets (MSDS). In addition, all employers covered by the standard will be required to provide the information to their employees using container labelling and other warnings, MSDSs and/or training programs.

Hazard Evaluation

Chemical manufacturers and importers will be required to review and assess the available scientific evidence on the hazards of chemicals they produce or import. They will also be required to report this information to their employees and to employers who purchase their products.

Each chemical will be evaluated for its potential to cause adverse health effects and to pose physical hazards, such as flammability. In addition, chemicals which have been evaluated and found to be suspect or confirmed carcinogens (by the U.S. National Toxicology Program, the International Agency for Research on Cancer or the U.S. Occupational Safety and Health Administration), are required to be reported as such.

Written Hazard Communication Program

Employers will be required to establish a written hazard communication program which should include provisions for

container labelling, Material Safety Data Sheets, and an employee training program. It must also contain a list of the hazardous chemicals in each work area, the means the employer will use to inform employees of the hazards of non-routine tasks, hazards associated with chemicals in unlabelled pipes, and the way employers will inform contractors in manufacturing facilities of the hazards to which their employees may be exposed.

This written program must be available to employees, their representatives, the U.S. Occupational Safety and Health Administration, and the U.S. National Institute for Occupational Safety and Health.

Labels and Other Forms of Warning

In the workplace, each container will be required to be labelled, tagged or marked with the identity of the hazardous chemicals contained in it, and must show hazard warnings appropriate for employee protection. The hazard warnings can be any type of message, words, pictures, or symbols which convey the hazards of the chemical(s) in the container. Labels must be legible, in English (and other languages, if desired), and prominently displayed.

In addition, chemical manufacturers, importers, and distributors must be sure that containers of hazardous chemicals leaving the workplace are labelled, tagged or marked with the identity, appropriate hazard warnings, and the name and address of the manufacturer or other responsible party.

There are several exemptions to these requirements for in-plant containers:

- Employers can post signs or placards which convey the hazard information if there are a number of stationary containers within a work area which have similar contents and hazards;

- Various types of standard operating procedures, process sheets, batch tickets, blend tickets, and similar written materials can be substituted for container labels on stationary process equipment, if they contain the same information and are readily available to employees in the work area;

- Employers are not required to label portable containers, into which hazardous chemicals are transferred from labelled containers, and which are intended only for the immediate use of the employee who makes the transfer;

- Employers are not required to label pipes or piping systems.

Material Safety Data Sheets (MSDS)

Chemical manufacturers and importers will be required to develop Material Safety Data Sheets for each hazardous chemical they produce or import. Employers will be responsible for obtaining or developing a MSDS for each hazardous chemical used in their workplace.

Copies of the MSDS for hazardous chemicals at a given work station should be readily accessible to employees in that area.

Employee Information and Training

Employers will be required to establish a training and information program for employees exposed to hazardous chemicals in their work area at the time of initial assignment and whenever a new hazard is introduced. By the time the standard takes effect, all affected employees must have received training equivalent to the initial assignment training.

The employee information program should include, at least:

- The existence of the Chemical Hazard Communication and its requirements;

- The components of the hazard communication program in the employees' workplaces;

- Operations in work areas where hazardous chemicals are present;

- Where the employer will keep the written hazard evaluation procedures, communications program, lists of hazardous chemicals, and the required material safety data sheets.

The employee training program should include, at least:

- How the hazard communication program is implemented in that workplace, how to read and interpret information on labels and MSDSs, and how employees can obtain and use the available hazard information;

- The hazards of the chemicals in the work area;

- Measures employees can take to protect themselves from the hazards;

- Specific procedures put into effect by the employer to provide protection such as work practices and the use of personal protective equipment;

- Methods and observations (such as visual appearance or smell) workers can use to detect the presence of hazardous chemicals they may be exposed to.

Confidentiality of Trade Secrets

The right to trade secrecy can be extended by industry to any chemical that can be substantiated as such. The original rule barred trade secrecy status for carcinogens, mutagens and teratogens. This provision attempts to strike a balance between the need to protect exposed employees and the employer's wishes to maintain the confidentiality of trade secrets. This will be done by providing for limited disclosure to health professionals who are providing medical or other occupational health services to exposed employees, under specified conditions of need and confidentiality.

Medical Emergency

The chemical manufacturer, importer, or employer will have to disclose immediately the specific chemical identity of a hazardous chemical to a treating physician or nurse when the information is needed for emergency or first aid treatment. As soon as circumstances permit, the chemical manufacturer, importer, or employer may obtain a written statement of need and a confidentiality agreement.

Under the contingency described here, the treating physician or nurse will have the ultimate responsibility for determining that a medical emergency exists. At the time of the emergency, the professional judgment of the physician or nurse must form the basis for triggering the immediate disclosure requirement. Because the chemical manufacturer, importer, or employer can demand a written statement of need and a confidentiality agreement to be completed after the emergency is abated, further disclosure of the trade secret can be effectively controlled.

Non-Emergency Situation

In non-emergency situations, chemical manufacturers, importers, or employers will be required to disclose the withheld specific chemical identity to health professionals providing medical or other occupational health services to exposed employees if certain conditions are met. In this context, "health professionals" include physicians, industrial hygienists, toxicologists, or epidemiologists.

The request for information will have to be in writing and describe in reasonable detail the medical or occupational health need for the information. The request of the health professional will be considered if the information will be used for one or more of the following activities:

- To assess the hazards of the chemicals to which employees will be exposed;

- To conduct or assess sampling of the workplace atmosphere to determine employee exposure levels;

- To conduct pre-assignment or periodic medical surveillance of exposed employees;

- To provide medical treatment to exposed employees;

- To select or assess appropriate personal protective equipment for exposed employees;

- To design or assess engineering controls or other protective measures for exposed employees;

- To conduct studies to determine the health effects of exposure.

The health professional will also have to specify why alternative information is insufficient. The request for information will be required to explain in detail why disclosure of the specific chemical identity is essential, and include the procedures to be used to protect the confidentiality of the information. It must include an agreement not to use the information for any purpose other than the health need stated or to release it under any circumstances, except to OSHA.

2. Assessment of Chemical Hazard Communication

Industries covered

The Chemical Hazard Communication will apply to manufacturing industries only. This will effectively exclude many workplaces where hazardous chemicals are used from the provisions of the standard. Workplaces not covered include hospitals, construction sites, research laboratories and car repair shops.

Confidentiality of trade secrets

The Chemical Hazard Communication recognizes the desire of industry to withhold chemical names they consider to be trade secrets. Therefore, what constitutes a trade secret is defined by industry, and many chemical names could be withheld from employees under this provision.

In emergency situations and some non-emergency situations specific chemical names are required to be disclosed, but only to a limited number of health professionals (physicians, industrial hygienists, toxicologists and epidemiologists). There is no requirement for any chemical names, considered to be trade

secrets, to be disclosed to employees. In addition, the health professional must, in non-emergency situations, specify why disclosure of the chemical identity is essential and why alternative information is insufficient. This means the burden of proof is on the health professional requesting disclosure, the industry having the right to secrecy, rather than there being a right to information.

Accessibility of information to non-employees

The Chemical Hazard Communication only covers employees in manufacturing industries. It does not apply to local residents who live in the neighbourhood of such facilities. Local residents will not, therefore, have any access to information about what hazardous chemicals are being used or more importantly what chemicals are being disposed of to sewers or emitted into the air. Many community and environmental groups see this as a major flaw.

In addition, the Communication appears to apply only to current employees. There are no provisions for disclosure of information to past employees who may have been exposed, and similarly there are no provisions for disclosure to prospective employees so they can assess the safety, or otherwise, of their future job.

Labelling requirements

There are several labelling provisions which will weaken the Communication's overall effectiveness. Firstly, employers are not required to label pipes or piping systems which transport or contain hazardous chemicals. In the event of a pipe rupturing, therefore, information about the chemical's identity will not be immediately available. Secondly, employers are not required to label portable containers, into which chemicals are transferred from labelled ones, and which are intended for immediate use. In practice, this could lead to mistakes being made. Thirdly, where there are a number of stationary containers in a given location with similar contents, a single sign or placard can be posted. This could be dangerous because often a few containers at a time will be used or transported away from the remainder. If there is an accident, information about the chemical's identity will not be readily available.

Although labels are required to be legible, there is no requirement for them to be in the language(s) of the employees. Many U.S. manufacturing industries employ non-English speaking personnel (for example, Hispanics), but there is no requirement for information to be conveyed to them in their own language(s). This could lead to confusion in the event of an accident.

Preemption of existing legislation

Many U.S. states and municipalities already have right-to-know legislation which could be preempted by the federal Chemical Hazard Communication, even though in most (if not all) cases the federal requirements will be less stringent than the local ones. At present, however, the situation is unclear and there is uncertainty about how the two sets of legislation will interact, although it will depend partly on the individual state's situation and partly on the local legislation itself.

The first factor that will be considered is whether or not the state in question has an approved plan for enforcement by the U.S. Occupational Safety and Health Administration. Twenty-one states have such plans at present. If so, any right-to-know legislation will be handled like any other workplace regulation, and will be subject to federal review. OSHA has indicated that such reviews will ensure that the state legislation is at least as effective as the federal Chemical Hazard Communication. But if the state legislation contains different standards OSHA will determine if there is a "compelling need" for more stringent standard and whether the state standard would put an "undue" burden on interstate commerce.

For states without an OSHA enforcement plan but with right-to-know legislation, the situation is less clear. OSHA has stated that the federal standard will preempt existing local legislation. But as it only covers manufacturing industries and employees, it is difficult to see how the federal standard could preempt either public access law or a law covering other industries in addition to manufacturing.

In 1983, California defeated OSHA over its right to promulgate a workplace standard for exposure to ethylene dibromide (EDB). California wanted to enact a standard 100 times more stringent than the federal limit existing at that time, but the court ruled against OSHA's argument that the lower standard would interfere with interstate commerce.

Recently, a coalition of the United Steel Workers of America, Ralph Nader's Public Citizen group and others launched a suit against the U.S. federal government in Philadelphia to have the standard reworked.

It is unclear how municipal right-to-know legislation would be affected by the federal Chemical Hazard Communication.

SUBPART Z—TOXIC AND HAZARDOUS SUBSTANCES

1910.1000

TABLE Z-1

Substance	p.p.m.*	mg./M³ *
Acetaldehyde	200	360
Acetic acid	10	25
Acetic anhydride	5	20
Acetone	1,000	2,400
Acetonitrile	40	70
Acetylene dichloride, see 1, 2-Dichloroethylene		
Acetylene tetrabromide	1	14
Acrolein	0.1	0.25
Acrylamide Skin		0.3
Aldrin - Skin		0.25
Allyl alcohol - Skin	2	5
Allyl chloride	1	3
C Allyl glycidyl ether (AGE)	10	45
Allyl propyl disulfide	2	12
2-Aminoethanol, see Ethanolamine		
2-Aminopyridine	0.5	2
Ammonia	50	35
Ammonium sulfamate (Ammate)		15
n-Amyl acetate	100	525
sec-Amyl acetate	125	650
Aniline - Skin	5	19
Anisidine (o, p-isomers) Skin		0.5
Antimony and compounds (as Sb)		0.5
ANTU (alpha naphthyl thiourea)		0.3

See footnotes at end of table.

TABLE Z-1—Continued

Substance	p.p.m.*	mg./M³ *
Arsine	0.05	0.2
Azinphos-methyl - Skin		0.2
Barium (soluble compounds)		0.5
p-Benzoquinone, see Quinone		
Benzoyl peroxide		5
Benzyl chloride	1	5
Biphenyl, see Diphenyl		
Boron oxide		15
C Boron trifluoride	1	3
Bromine	0.1	0.7
Bromoform Skin	0.5	5
Butadiene (1, 3-butadiene)	1,000	2,200
Butanethiol, see Butyl mercaptan		
2-Butanone	200	590
2-Butoxy ethanol (Butyl Cellosolve) Skin	50	240
Butyl acetate (n-butyl acetate)	150	710
sec-Butyl acetate	200	950
tert-Butyl acetate	200	950
Butyl alcohol	100	300
sec-Butyl alcohol	150	450
tert-Butyl alcohol	100	300
C Butylamine—Skin	5	15
C tert-Butyl chromate (as CrO_3) - Skin		0.1
n-Butyl glycidyl ether (BGE)	50	270
Butyl mercaptan	10	35
p-tert-Butyltoluene	10	60
Calcium oxide		5
Camphor		2
Carbaryl (Sevin ®)		5
Carbon black		3.5
Carbon dioxide	5,000	9,000
Carbon monoxide	50	55
Chlordane - Skin		0.5
Chlorinated camphene—Skin		0.5
Chlorinated diphenyl oxide		0.5
C Chlorine	1	3
Chlorine dioxide	0.1	0.3
C Chlorine trifluoride	0.1	0.4
C Chloroacetaldehyde	1	3
α-Chloroacetophenone (phenacylchloride)	0.05	0.3
Chlorobenzene (monochlorobenzene)	75	350
o-Chlorobenzylidene malononitrile (OCBM)	0.05	0.4
Chlorobromomethane	200	1,050
2-Chloro-1,3-butadiene, see Chloroprene		
Chlorodiphenyl (42 percent Chlorine) - Skin		1
Chlorodiphenyl (54 percent Chlorine) Skin		0.5
1-Chloro-2,3-epoxypropane, see Epichlorohydrin		
2-Chloroethanol, see Ethylene chlorohydrin		

TABLE Z-1—Continued

Substance	p.p.m.[a]	mg./M³ [b]
Chloroethylene, see Vinyl chloride		
C Chloroform (trichloromethane)	50	240
1 Chloro-1-nitropropane	20	100
Chloropicrin	0.1	0.7
Chloroprene (2-chloro-1,3-butadiene)—Skin	25	90
Chromium, sol. chromic, chromous salts as Cr		0.5
Metal and insol. salts		1
Coal tar pitch volatiles (benzene soluble fraction) anthracene, BaP, phenanthrene, acridine, chrysene, pyrene		0.2
Cobalt, metal fume and dust		0.1
Copper fume		0.1
Dusts and Mists		1
Cotton dust (raw)		1
Crag® herbicide		15
Cresol (all isomers) Skin	5	22
Crotonaldehyde	2	6
Cumene Skin	50	245
Cyanide (as CN)—Skin		5
Cyclohexane	300	1,050
Cyclohexanol	50	200
Cyclohexanone	50	200
Cyclohexene	300	1,015
Cyclopentadiene	75	200
2,4-D		10
DDT Skin		1
DDVP, Skin		1
Decaborane Skin	0.05	0.3
Demeton® Skin		0.1
Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	50	240
1,2-diaminoethane, see Ethylenediamine		
Diazomethane	0.2	0.4
Diborane	0.1	0.1
Dibutyl Phosphate	1	5
Dibutylphthalate		5
C o-Dichlorobenzene	50	300
p-Dichlorobenzene	75	450
Dichlorodifluoromethane	1,000	4,950
1,3-Dichloro-5,5-dimethyl hydantoin		0.2
1,1-Dichloroethane	100	400
1,2-Dichloroethylene	200	790
C Dichloroethyl ether—Skin	15	90
Dichloromethane, see Methylenechloride		
Dichloromonofluoromethane	1,000	4,200
C 1,1-Dichloro-1-nitroethane	10	60
1,2-Dichloropropane, see Propylenedichloride		
Dichlorotetrafluoroethane	1,000	7,000
Dieldrin—Skin		0.25
Diethylamine	25	75
Diethylamino ethanol—Skin	10	50
Diethylether, see Ethyl ether		
Difluorodibromomethane	100	860
C Diglycidyl ether (DGE)	0.5	2.8
Dihydroxybenzene, see Hydroquinone		
Diisobutyl ketone	50	290
Diisopropylamine—Skin	5	20

See footnotes at end of table.

TABLE Z-1—Continued

Substance	p.p.m.[a]	mg./M³ [b]
Dimethoxymethane, see Methylal		
Dimethyl acetamide—Skin	10	35
Dimethylamine	10	18
Dimethylaminobenzene, see Xylidene		
Dimethylaniline (N-dimethylaniline)—Skin	5	25
Dimethylbenzene, see Xylene		
Dimethyl 1,2-dibromo-2,2-dichloroethyl phosphate, (Dibrom)		3
Dimethylformamide—Skin	10	30
2,6-Dimethylheptanone, see Diisobutyl ketone		
1,1-Dimethylhydrazine—Skin	0.5	1
Dimethylphthalate		5
Dimethylsulfate—Skin	1	5
Dinitrobenzene (all isomers)—Skin		1
Dinitro-o-cresol—Skin		0.2
Dinitrotoluene—Skin		1.5
Dioxane (Diethylene dioxide)—Skin	100	360
Diphenyl	0.2	1
Diphenylmethane diisocyanate (see Methylene bisphenyl isocyanate (MDI)		
Dipropylene glycol methyl ether Skin	100	600
Di-sec. octyl phthalate (Di-2-ethylhexylphthalate)		5
Endrin Skin		0.1
Epichlorhydrin—Skin	5	19
EPN Skin		0.5
1,2 Epoxypropane, see Propyleneoxide		
2,3 Epoxy-1-propanol, see Glycidol		
Ethanethiol, see Ethylmercaptan		
Ethanolamine	3	6
2-Ethoxyethanol Skin	200	740
2-Ethoxyethylacetate (Cellosolve acetate)—Skin	100	540
Ethyl acetate	400	1,400
Ethyl acrylate—Skin	25	100
Ethyl alcohol (ethanol)	1,000	1,900
Ethylamine	10	18
Ethyl sec-amyl ketone (5-methyl-3-heptanone)	25	130
Ethyl benzene	100	435
Ethyl bromide	200	890
Ethyl butyl ketone (3-Heptanone)	50	230
Ethyl chloride	1,000	2,600
Ethyl ether	400	1,200
Ethyl formate	100	300
C Ethyl mercaptan	10	25
Ethyl silicate	100	850
Ethylene chlorohydrin—Skin	5	16
Ethylenediamine	10	25
C Ethylene glycol dinitrate and/or Nitroglycerin—Skin	[d] 0.2	1
Ethylene glycol monomethyl ether acetate, see Methyl cellosolve acetate		
Ethylene imine—Skin	0.5	1

See footnotes at end of table.

TABLE Z-1—Continued

Substance	p.p.m.*	mg./M³ *
Ethylene oxide	50	90
Ethylidine chloride, see 1,1-Dichloroethane		
N-Ethylmorpholine—Skin	20	94
Ferbam		15
Ferrovanadium dust		1
Fluoride (as F)		2.5
Fluorine	0.1	0.2
Fluorotrichloromethane	1,000	5,600
Formic acid	5	9
Furfural—Skin	5	20
Furfuryl alcohol	50	200
Glycidol (2,3-Epoxy-1-propanol)	50	150
Glycol monoethyl ether, see 2-Ethoxyethanol		
Guthion ®, see Azinphos-methyl		
Hafnium		0.5
Heptachlor—Skin		0.5
Heptane (n-heptane)	500	2,000
Hexachloroethane—Skin	1	10
Hexachloronaphthalene—Skin		0.2
Hexane (n-hexane)	500	1,800
2-Hexanone	100	410
Hexone (Methyl isobutyl ketone)	100	410
sec-Hexyl acetate	50	300
Hydrazine—Skin	1	1.3
Hydrogen bromide	3	10
C Hydrogen chloride	5	7
Hydrogen cyanide—Skin	10	11
Hydrogen peroxide (90%)	1	1.4
Hydrogen selenide	0.05	0.2
Hydroquinone		2
C Iodine	0.1	1
Iron oxide fume		10
Isoamyl acetate	100	525
Isoamyl alcohol	100	360
Isobutyl acetate	150	700
Isobutyl alcohol	100	300
Isophorone	25	140
Isopropyl acetate	250	950
Isopropyl alcohol	400	980
Isopropylamine	5	12
Isopropylether	500	2,100
Isopropyl glycidyl ether (IGE)	50	240
Ketene	0.5	0.9
Lindane—Skin		0.5
Lithium hydride		0.025
L.P.G. (liquified petroleum gas)	1,000	1,800
Magnesium oxide fume		15
Malathion—Skin		15
Maleic anhydride	0.25	1
C Manganese		5
Mesityl oxide	25	100
Methanethiol, see Methyl mercaptan		
Methoxychlor		15
2-Methoxyethanol, see Methyl cellosolve		
Methyl acetate	200	610
Methyl acetylene (propyne)	1,000	1,650
Methyl acetylene-propadiene mixture (MAPP)	1,000	1,800
Methyl acrylate—Skin	10	35
Methylal (dimethoxymethane)	1,000	3,100
Methyl alcohol (methanol)	200	260

TABLE Z-1—Continued

Substance	p.p.m.*	mg./M³ *
Methylamine	10	12
Methyl amyl alcohol, see Methyl isobutyl carbinol		
Methyl (n-amyl) ketone (2-Heptanone)	100	465
C Methyl bromide—Skin	20	80
Methyl butyl ketone, see 2-Hexanone		
Methyl cellosolve—Skin	25	80
Methyl cellosolve acetate—Skin	25	120
Methyl chloroform	350	1,900
Methylcyclohexane	500	2,000
Methylcyclohexanol	100	470
o-Methylcyclohexanone—Skin	100	460
Methyl ethyl ketone (MEK), see 2-Butanone		
Methyl formate	100	250
Methyl iodide—Skin	5	28
Methyl isobutyl carbinol—Skin	25	100
Methyl isobutyl ketone, see Hexone		
Methyl isocyanate—Skin	0.02	0.05
C Methyl mercaptan	10	20
Methyl methacrylate	100	410
Methyl propyl ketone, see 2-Pentanone		
C α-Methyl styrene	100	480
C Methylene bisphenyl isocyanate (MDI)	0.02	0.2
Molybdenum:		
Soluble compounds		5
Insoluble compounds		15
Monomethyl aniline—Skin	2	9
C Monomethyl hydrazine—Skin	0.2	0.35
Morpholine—Skin	20	70
Naphtha (coaltar)	100	400
Naphthalene	10	50
Nickel carbonyl	0.001	0.007
Nickel, metal and soluble cmpds, as Ni		1
Nicotine—Skin		0.5
Nitric acid	2	5
Nitric oxide	25	30
p-Nitroaniline—Skin	1	6
Nitrobenzene—Skin	1	5
p-Nitrochlorobenzene—Skin		1
Nitroethane	100	310
C Nitrogen dioxide	5	9
Nitrogen trifluoride	10	29
C Nitroglycerin—Skin	0.2	2
Nitromethane	100	250
1-Nitropropane	25	90
2-Nitropropane	25	90
Nitrotoluene—Skin	5	30
Nitrotrichloromethane, see Chloropicrin		
Octachloronaphthalene—Skin		0.1
Octane	500	2,350
Oil mist, mineral		5
Organic Arsenic compounds (as As)		0.5
Osmium tetroxide		0.002
Oxalic acid		1
Oxygen difluoride	0.05	0.1
Ozone	0.1	0.2
Paraquat—Skin		0.5
Parathion—Skin		0.1
Pentaborane	0.005	0.01

*See footnotes at end of table.

TABLE Z-1—Continued

Substance	p.p.m.[a]	mg./M³ [b]
Pentachloronaphthalene—Skin		0.5
Pentachlorophenol—Skin		0.5
Pentane	1,000	2,950
2-Pentanone	200	700
Perchloromethyl mercaptan	0.1	0.8
Perchloryl fluoride	3	12.5
Petroleum distillates (naphtha)	500	2,000
Phenol—Skin	5	19
p-Phenylene diamine—Skin		0.1
Phenyl ether (vapor)	1	7
Phenyl ether-biphenyl mixture (vapor)	1	7
Phenylethylene, see Styrene		
Phenyl glycidyl ether (PGE)	10	60
Phenylhydrazine—Skin	5	22
Phosdrin (Mevinphos ®)—Skin		0.1
Phosgene (carbonyl chloride)	0.1	0.4
Phosphine	0.3	0.4
Phosphoric acid		1
Phosphorus (yellow)		0.1
Phosphorus pentachloride		1
Phosphorus pentasulfide		1
Phosphorus trichloride	0.5	3
Phthalic anhydride	2	12
Picric acid—Skin		0.1
Pival ® (2-Pivalyl-1,3-indandione)		0.1
Platinum (Soluble Salts) as Pt		0.002
Propane	1,000	1,800
n-Propyl acetate	200	840
Propyl alcohol	200	500
n-Propyl nitrate	25	110
Propylene dichloride	75	350
Propylene imine—Skin	2	5
Propylene oxide	100	240
Propyne, see Methylacetylene		
Pyrethrum		5
Pyridine	5	15
Quinone	0.1	0.4
Rhodium, Metal fume and dusts, as Rh		0.1
Soluble salts		0.001
Ronnel		15
Rotenone (commercial)		5
Selenium compounds (as Se)		0.2
Selenium hexafluoride	0.05	0.4
Silver, metal and soluble compounds		0.01
Sodium fluoroacetate (1080)—Skin		0.05
Sodium hydroxide		2
Stibine	0.1	0.5
Stoddard solvent	500	2,900
Strychnine		0.15
Sulfur dioxide	5	13
Sulfur hexafluoride	1,000	6,000
Sulfuric acid		1
Sulfur monochloride	1	6
Sulfur pentafluoride	0.025	0.25
Sulfuryl fluoride	5	20
Systox, see Demeton ®		
2,4,5T		10
Tantalum		5
TEDP—Skin		0.2
Tellurium		0.1

TABLE Z-1—Continued

Substance	p.p.m.[a]	mg./M³ [b]
Tellurium hexafluoride	0.02	0.2
TEPP—Skin		0.05
C Terphenyls	1	9
1,1,1,2-Tetrachloro-2,2-difluoroethane	500	4,170
1,1,2,2-Tetrachloro-1,2-difluoroethane	500	4,170
1,1,2,2-Tetrachloroethane—Skin	5	35
Tetrachloromethane, see Carbon tetrachloride		
Tetrachloronaphthalene—Skin		2
Tetraethyl lead (as Pb)—Skin		0.075
Tetrahydrofuran	200	590
Tetramethyl lead (as Pb)—Skin		0.075
Tetramethyl succinonitrile—Skin	0.5	3
Tetranitromethane	1	8
Tetryl (2,4,6-trinitrophenylmethylnitramine)—Skin		1.5
Thallium (soluble compounds) Skin as Tl		0.1
Thiram		5
Tin (inorganic cmpds, except oxides		2
Tin (organic cmpds)		0.1
C Toluene-2,4-diisocyanate	0.02	0.14
o-Toluidine—Skin	5	22
Toxaphene, see Chlorinated camphene		
Tributyl phosphate		5
1,1,1-Trichloroethane see Methyl chloroform		
1,1,2-Trichloroethane—Skin	10	45
Titanium dioxide		15
Trichloromethane, see Chloroform		
Trichloronaphthalene—Skin		5
1,2,3-Trichloropropane	50	300
1,1,2-Trichloro 1,2,2-trifluoroethane	1,000	7,600
Triethylamine	25	100
Trifluoromonobromomethane	1,000	6,100
2,4,6-Trinitrophenol, see Picric acid		
2,4,6-Trinitrophenylmethylnitramine, see Tetryl		
Trinitrotoluene—Skin		1.5
Triorthocresyl phosphate		0.1
Triphenyl phosphate		3
Turpentine	100	560
Uranium (soluble compounds)		0.05
Uranium (insoluble compounds)		0.25
C Vanadium:		
V_2O_5 dust		0.5
V_2O_5 fume		0.1
Vinyl benzene, see Styrene		
Vinylcyanide, see Acrylonitrile		
Vinyl toluene	100	480
Warfarin		0.1
Xylene (xylol)	100	435
Xylidine—Skin	5	25
Yttrium		1
Zinc chloride fume		1
Zinc oxide fume		5
Zirconium compounds (as Zr)		5

See footnotes at end of table.

Footnotes continued on page 700.

TABLE Z-2

Material	8-hour time weighted average	Acceptable ceiling concentration	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift.	
			Concentration	Maximum
Benzene (Z37.40-1969)[3]	10 p.p.m	25 p.p.m	50 p.p.m	10 minutes.
Beryllium and beryllium compounds (Z37.29-1970).	2 μg./M³	5 μg./M³	25 μg./M³	30 minutes.
Cadmium dust (Z37.5-1970)	0.2 mg./M³	0.6 mg./M³		
Cadmium fume (Z37.5-1970)	0.1 mg./M³	0.3 mg./M³		
Carbon disulfide (Z37.3-1968)	20 p.p.m	30 p.p.m	100 p.p.m	30 minutes
Carbon tetrachloride (Z37.17-1967)	10 p.p.m	25 p.p.m	200 p.p.m	5 minutes in any 4 hours.
Ethylene dibromide (Z37.31-1970)	20 p.p.m	30 p.p.m	50 p.p.m	5 minutes.
Ethylene dichloride (Z37.21-1969)	50 p.p.m	100 p.p.m	200 p.p.m	5 minutes in any 3 hours.
Fluoride as dust (Z37.23-1969)	2.5 mg./M³			
Formaldehyde (Z37.16-1967)	3 p.p.m	5 p.p.m	10 p.p.m	30 minutes.
Hydrogen fluoride (Z37.23-1969)	do			
Hydrogen sulfide (Z37.2-1966)		20 p.p.m	50 p.p.m	10 minutes once only if no other measurable exposure occurs.
Methyl chloride (Z37.18-1969)	100 p.p.m	200 p.p.m	300 p.p.m	5 minutes in any 3 hours.
Methylene Chloride (Z37.3-1969)	500 p.p.m	1,000 p.p.m	2,000 p.p.m	5 minutes in any 2 hours.
Organo (alkyl) mercury (Z37.30-1969)	0.01 mg./M³	0.04 mg./M³		
Styrene (Z37.15-1969)	100 p.p.m	200 p.p.m	600 p.p.m	5 minutes in any 3 hours.
Tetrachloroethylene (Z37.22-1967)	100 p.p.m	200 p.p.m	300 p.p.m	5 minutes in any 3 hours.
Toluene (Z37.12-1967)	200 p.p.m	300 p.p.m	500 p.p.m	10 minutes.
Trichloroethylene (Z37.19-1967)	100 p.p.m	200 p.p.m	300 p.p.m	5 minutes in any 2 hours.
Mercury (Z37.8-1971)		1 mg./10M³		
Chromic acid and chromates (Z37.7-1971)		do[3]		

TABLE Z-3—MINERAL DUSTS

Substance	Mppcf[4]	Mg/M³
Silica:		
Crystalline:		
Quartz (respirable)	250[5]	10mg/M³ ÷
	%SiO₂+5	%SiO₂+2
Quartz (total dust)		30mg/M³
		%SiO₂+2
Cristobalite: Use ½ the value calculated from the count or mass formulae for quartz.		
Tridymite: Use ½ the value calculated from the formulae for quartz.		
Amorphous, including natural diatomaceous earth	20	80mg/M³
		%SiO₂
Silicates (less than 1% crystalline silica):		
Mica	20	
Soapstone	20	
Talc (non-asbestos form)	20[6]	
Talc (fibrous). Use asbestos limit		
Tremolite (see talc, fibrous)		
Portland cement	50	
Graphite (natural)	15	
Coal dust (respirable fraction less than 5% SiO₂)		2.4mg/M³
For more than 5% SiO₂		or 10mg/M³
		%SiO₂+2
Inert or Nuisance Dust:		
Respirable fraction	15	5mg/M³

Subpart Z-Toxic and Hazardous Substances

1910.1001	Asbestos
1910.1002	Coal Tar Pitch Volatiles
1910.1003	4-Nitrobiephenyl.
1910.1004	alpha-Naphthylamine
1910.1005	4, 4', Methylene bis (2 chloroaniline).
1910.1006	Methyl chloromethyl ether

Continued

Subpart Z

Continuod

1910.1007	3, 3'-Dichlorobenzine (and its salts)
1910.1008	bis-Chloromethyl ether
1910.1009	beta-Naphthylamine
1910.1010	Benzidine
1910.1011	4-Aminodiphenyl
1910.1012	Ethyleneimine
1910.1013	beta Propiolactone
1910.1014	2-Acetylaminofluorene
1910.1015	4-Dimethylaminoazobenzine
1910.1016	N-Nitrosodimethylamine
1910.1017	Vinyl Chloride
1910.1018	Inorganic arsenic
1910.1025	Lead
1910.1028	Benzene
1910.1029	Coke Oven Emissions
1910.1043	Cotton dust
1910.1044	1,2 - dibromo - 3 - chloropropane
1910.1045	Acrylonitrile
1910.1046	Exposure to cotton dust in cotton gins.

SECTION 7: ALTERNATIVES TO A TORONTO RIGHT-TO-KNOW BYLAW

7.1 ALTERNATIVE 1 - MINISTRY OF LABOUR

7.1.1 Policy Change on Confidentiality

In order to achieve greater information than is generally available at the present time from the Ministry of Labour, an approach could be made by City Council to the Minister of Labour, asking that the policies and legislative limitations regarding confidentiality within the Ministry be reviewed. This would be aimed specifically at getting more information into the hands of workers; information that presumably is within the purview of the Ministry to obtain from the employers.

Specifically, what would be required of the Ministry is that the chemical or substance name of all materials with which a worker might come into contact during his/her working day be made available to them.

Currently, there must be reservation noted regarding the Ministry's interpretation of its responsibility in the matter of confidentiality. The discretion permitted a Director is applicable only to information that would otherwise be confidential pursuant to Section 34 (1) (b). The policy is to use the discretion in special circumstances, and not to allow it to be used as a means of avoiding the confidentiality requirement of Section 34 (1) (a). The discretion has been exercised by the Director, however, at the request of a specific employer or of a specific worker in a proceeding involving the interest of the particular employer or worker, e.g., in relation to a claim under the Workmen's Compensation Act.

This means that the Ministry still regards the maintaining of confidentiality a basic duty, and particularly so in the case of trade secrets. Nevertheless, for workers, this could still be the most effective route for attaining a much more comprehensive right-to-know, and would have the great advantage of being provincial in coverage, rather than being restricted to the City of Toronto. Certainly from a public health point of view the broader the jurisdiction of such coverage the better.

There are a number of possible new approaches which could help overcome reluctance on the part of business establishments who feel certain information to be very sensitive, but who presumably appreciate their employees' desire for information. These might include:

- patenting the secret prior to disclosure

- divulging the secret to the health and safety committee, the safety representative, the union bargaining committee or inspectorate on the express warning that the information is a trade secret; and

- limiting the spread of trade secrets beyond the workplace by incorporating and highlighting protection clauses in contracts and agreements.

The above suggestions were put forward by Michael Nash at a one-day symposium on "Hazardous Substances and the Right-to-Know" sponsored by the Canadian Environmental Law Research Foundation. Nash suggests that labour also has an interest in protecting genuine trade secrets.

While the authors harbour few illusions about the level of trust which currently exists, and most certainly recognize that modification of the Ministry's policy is optimistic, nevertheless it remains a goal well worth the exploration.

7.1.2 Limitation

The public at large, and the municipality would not appear to gain information from this option without the workers breaching the confidences agreed upon between themselves and the employers. Therefore, it would not be a community right-to-know route as such.

There also would remain the problem of the foreign-supplied materials used in Ontario, and as previously noted, this is a concern which requires federal cooperation. However, the WHMIS work may be a solution to this problem.

7.2 ALTERNATIVE 2 - MINISTRY OF THE ENVIRONMENT

7.2.1 General

Certainly one potential approach for more information assembly for municipal purposes under existing legislation could be to apply to the Minister of the Environment to have a number of City of Toronto staff designated as "Provincial Officers" under the Environmental Protection Act. As noted, this official does have the necessary survey powers under the Act, and therefore could demand the information deemed necessary for the purpose of the municipal right-to-know.

There is precedent for such delegation procedure under the Act. Under existing arrangements for the application of Part VII of the Environmental Protection Act (dealing with private sewage

systems) the Medical Officer of Health and his staff have been devolved of the responsibility to carry out specific parts of the law, and there is no apparent reason that such designation could not be made broader to include the entire Act, or at least the relevant sections necessary for the purposes intended.

It would appear that the Medical Officer of Health is party to any information gathered by his/her staff under the existing arrangements, and therefore this is certainly a route which must be regarded favourably toward the obtaining of specific information on hazardous substances emitted into the environment, at least for the use of the Medical Officer of Health.

Another advantage here is that it is province-wide in coverage rather than being local legislation, and would therefore be available to each Medical Officer of Health in Ontario. As noted above, such a provincial application of the right-to-know is the preferred route from a public health stance.

7.2.2 Limitation

There would still be a restriction on the information available through this route to the general public, and possibly to workers involved in the situation, other than their access through the Occupational Health and Safety Act, as outlined in Section 2.

Further, it would seem that the municipal employees acting under the Act would be bound by the confidentiality clause noted earlier (EPA - Section 130), and the information would be available only to the Minister of the Environment and the designated 'Provincial Officers', including the Medical Officer of Health. Under the Environmental Protection Act this information cannot even be subpoenaed for private court proceedings.

7.3 ALTERNATIVE 3 - PROVINCIAL RIGHT-TO-KNOW LEGISLATION

7.3.1 General

A provincial act providing for greater access to hazardous materials information would be a most desirable option. There are a number of matters, however, which would have to be carefully reviewed respecting any such legislation, particularly to ensure that there is no conflict between existing statutes and the new Act. Such problems would only serve to dilute the effectiveness of the new legislation, and especially so if the existing statutes are found to have higher status. Such legislation could be presented to the Legislature by the Ministry

involved, with its Minister acting as the proponent, or through a Private Member's Bill.

In addition, the provincial authority must always be very sensitive to local autonomy, particularly in Ontario where there is a strong tradition of local control.

7.3.2 Private Member's Bill

The Department of Public Health has received indication that a number of Private Members' Bills requesting increased access to information are likely to be presented to the Legislature during the next sitting.

Should such bills be presented, consideration should be given by the Board of Health and City Council to its support, presuming that its structure is in keeping with reasonable access to information.

7.3.3 Bill 80 -- Privacy and Access to Information Act, 1984

As has already been noted (Section 2.7), Bill 80 is currently before the legislature and would, at first glance, appear to address a number of the existing limitations to information access.

However, on more detailed examination it would appear that the Bill gives the particular authority germane to the issue here back to the very administrations, and the respective pieces of legislation, which have been found so limiting as to require the passage of such an Act. These would seem to include the Environmental Assessment Act, the Environmental Protection Act, and the Occupational Health and Safety Act.

For example, in Section 12 of the Bill, even though the Chairman of the Management Board of Cabinet would cause a list to be published annually which included a description of all classes of records under the control of each public institution, the Bill notes that such "... shall not be construed to require the publication of any information that the head of a public institution would be entitled or required to refuse to disclose under this Act."

Therefore, this Bill is not regarded as adequate for the purpose of increasing access to information, particularly if such information is controversial.

7.3.4 Statutory By-law

The statutory by-law, an old-fashioned legal tool, may well be the solution to a number of the problems which have been expressed by other members of the administrative services in the City regarding a specific by-law for Toronto only.

It's great advantage is that it has the local attributes of a by-law passed by Council, while being in effect across the Province. In addition, each local council may add to its provisions to suit specific needs.

Statutory by-laws are usually passed in association with an act, thereby giving them the weight of the Legislature in enforcement matters and interpretations.

The peculiarities of this legislation is best shown by Schedule 'B' of the Public Health Act (now repealed), and which has now been transferred to the Health Protection and Promotion Act with the status of a regulation:

Section 156 (1) and (2) of the old Public Health Act read:

> "Subject to section 12, the by-law in Schedule B shall be in force in every municipality as if enacted by the council thereof, and the council of every municipality may pass by-laws with the approval of the Minister for making additional requirements in respect of any matters dealt with by the by-law in Schedule B.
>
> "The council of any municipality may, with the approval of the Minister, amend the by-law in Schedule B for the purposes of such municipality so as to conform to the requirements of the municipality or to meet such special circumstances as, in the opinion of the Minister, may warrant such amendment and, subject to section 12, every such amendment has the same force and authority as a regulation made by the Minister."

Upon conviction under the Health Protection and Promotion Act, Section 100 provides for individuals to be fined up to $5000 per day or part of a day on which the offence occurs or continues, and for corporations the maximum is increased to $25,000 per day or part of a day on which the offence occurs or continues.

With such a legal tool, provincial concerns would be addressed because the Minister responsible for the Act would be able to have the access to information provided to Medical Officers of Health across the Province of Ontario, preventing uncooperative

individuals or industries from playing one municipality against the other for relief from the disclosure requirements.

The Minister would be able to ensure that any municipality which desired to amend the by-law was acting in the best interests of the community being served. By tradition, the provisions of Schedule B have only been approved by the Minister if they were made more stringent, and never if they were diluted in their coverage or scope. This would certainly be the tradition to follow.

With this approach Toronto would not be disadvantaged in competition with less demanding municipalities, and would still be able to add whatever additional substances or chemicals it wished to the reporting requirements.

Enforcement would be left to the local level, likely the Medical Officer of Health, and the prosecution would be carried out under the Provincial Offences Act.

The costs of administering such statutory by-laws is left to the local municipality, and this would mean a minimum of expense to the province, excepting the amount of any cost-sharing as discussed in 7.3.4.1

This could be an excellent approach which has a long precedence in effective use, particularly in Toronto, and as such should receive support from the Department of Public Health and the Board of Health if it is decided by the Board that a by-law approach should be recommended to Council.

7.3.4.1 Cost-Sharing

If appropriate legislation existed with a statutory by-law as described, the administration costs in carrying out the law could be cost-shared with the Ministry sponsoring the law, and the municipality would receive some relief from the costs. Such sharing would also give the Province the opportunity to show its full support for the philosophy of the right-to-know, support which several of the Ministries have already acknowledged.

7.3.4.2 Public Health Support

Because of the provincial nature of such a bill, Toronto could actively solicit the support of other Medical Officers of Health and public health people throughout the Province. This is a considerable advantage in support compared to the individual approach which could not call on the other public health resources for lobbying support.

7.3.4.3 Health Protection and Promotion Act

Such a statutory by-law could be tacked onto the new act in exactly the same manner as has Schedule B. This would simplify the legislative procedure considerably.

7.3.4.4 Lead Ministry

Given that the concern being addressed in the right-to-know is the long-term health of the public, the Ministry of Health should be considered as the appropriate agency to initiate and introduce such legislation.

7.4 ALTERNATIVE 4 - FEDERAL RIGHT-TO-KNOW ACT

Federal legislation would have probable conflict with many matters clearly in provincial jurisdiction, requiring the unlikely cooperation of all provinces to make effective concessions and harmonious legislative adjustments. Therefore, this is an option with little likelihood of being a viable alternative for effective right-to-know processes. Nevertheless, it must be recognized that only full federal cooperation in the international forum will permit the work to be a success. This is the only practical means to get the suppliers from abroad to provide the necessary information to make such a right-to-know process work. As has been pointed out several times in this review, this is a matter of great importance in achieving true benefit from any legislation, regardless of government level, and is being addressed by the WHMIS talks under Labour Canada at this time.

7.5 ALTERNATIVE 5 - PLANNING ACT

Provisions could be included in a planning act which would make it mandatory to list in advance the materials to be used or stored in any projected development, large or small. Currently, it is possible to ordain the uses of premises within the four (4) industrial classifications listings which exist under the legislation.

However, any such provisions are unlikely to be applicable to existing situations. In addition, there is little guarantee that the premises included in the planning arrangements would be maintained in their estate as originally designed, and as such, maintenance clauses would have to be specified along with appropriate safeguards of application in the future. These may prove to be a major problem for administration and enforcement.

7.6 NON-ALTERNATIVES

7.6.1 Ministry of Municipal Affairs and Housing

John Jackson has suggested that one route to the empowering of the municipality to require the information necessary for right-to-know approaches was to ask the Minister of Municipal Affairs and Housing to reintroduce his municipal licensing proposal.

The Minister has indicated by letter (24/2/84) that he will not be proceeding with further development of such a bill because of an absence of concensus between municipal and business interests.

Therefore, it appears clear that this avenue for enabling legislation permitting by-law development is unlikely to be available in the near future.

PART C

APPENDIX 1

OPTIONS FOR CITY OF TORONTO RIGHT-TO-KNOW BY-LAW PROVISIONS

The resources required to carry out an effective by-law application must be provided from existing staff and equipment, or new personnel and services will have to be hired and provided for in Department of Public Health program change statements.

In determining the staff resources and the information gathering facilities required, the nature and the specific intent of the legislation would have to be more clearly known. However, several possibilities suggest themselves at this time for the purpose of discussion.

FORM A

- define the affected premises and businesses
- hazard list drawn up by Department of Public Health
- list mailed to affected premises
- list returned to City Hall; recorded on computer
- public invited to enquire about the results

Projected staff requirements - less than 5 persons

Additional costs: space; computer time; printing and mailing charges.

Comment:

This option relies very heavily upon trust existing between the municipality and the premises affected by the terms of the by-law. While this option certainly is the simplest approach to information gathering, it is open to question whether this method would attain a meaningful degree of information.

FORM B

(THE SAME AS IN FORM A ABOVE, BUT CITY OFFICIALS RESERVE THE RIGHT TO VERIFY THE INFORMATION PROVIDED BY THE AFFECTED PREMISES THROUGH FIELD VISITS).

In addition to the provisions in Form A, Form B would require these additional items:

- a right of entry clause
- a right to sample clause
- a right to information clause
- a penalty for failure to permit inspection or sampling or to provide the information required.

Projected Staff requirements - less than 5 regular staff, with a maximum of 5 occasional inspection staff.

Additional costs: space, printing and mailing, laboratory fees, computer time.

Comment: This option is more likely than Option A to address the concerns of the labour groups and the health clinics who responded to the initial presentation of the Jackson report. The estimate for the staff allocation is based upon the assumption that good cooperation in filling out the mailed-out forms is achieved. This would greatly reduce the necessity for field visits for the purpose of data gathering, reserving such on-site visits for the investigation of complaints. Verification visits could be periodically decided upon by the responsible municipal official.

FORM C

- definition of affected premises and businesses
- hazard list drawn up by Department of Public Health
- municipal inspection of each premises
- right of entry clause
- right to sample clause

- right to information clause

- penalty for breach of by-law

Projected staff requirements - 30 field inspection staff; and 3 support staff.

Additional costs: space, printing and mailing, laboratory fees, computer time.

Comment:

Given that the estimated staff number might be 30 persons, the cost could be considerable for personnel, plus an additional sum for data services, physical space and laboratory costs. (It is unlikely that the Ministry of Labour would be able to provide such laboratory services free of charge for a large scale municipal programme without adversely affecting their own service. Therefore, this cost must be included in the municipal analysis).

ADDITIONAL CONSIDERATIONS FOR THE BY-LAW OPTIONS

(1) Confidentiality

It is recognized that confidentiality is an aspect of great concern to many industries and handlers, because it is strongly felt by many to be essential to their business interests. This is, of course, the reason for the existence of the confidentiality clauses in the Occupational Health and Safety Act and the Environmental Protection Act.

It would appear that for the suggested by-law to have the intended effect of making public the information assembled under its provisions, there can be no confidentiality clause permitted in it. To include one would appear to place the same limitations on the by-law as currently exist under the provincial acts noted in Section 2.

Nevertheless, serious thought will have to be given to situations such as restaurants (menus, ingredients, pest control chemicals, etc.), laboratories (chemicals, work processes, experiments and their purposes, etc.), and hospitals (types of illness being treated, experiments, etc.). These decisions will not be simple, but must be dealt with. In this regard it is likely that the legislative efforts undertaken in the United States may provide a good guide.

(2) Posting of Hazard Notices

The posting of hazard notices before the premises affected may be part of such a by-law if City Council sees this to be a wise provision. Such a notice could be in several formats:

a) The notice could be posted in a publicly visible place before the premises handling or storing the material of concern, and the notice would only note the specific names of the materials.

b) The notice could be posted in a publicly visible place before the premises handling or storing the material of concern, and the notice would note the specific names of all the listed materials, and their location on the premises.

c) The notice could be posted in a publicly visible place before the premises handling or storing the material of concern, and the notice would indicate only that a hazardous material is on the premises, and provide a telephone number of the municipal agency responsible for the information retention of the hazard listings.

APPENDIX 2

SAFETY ASSOCIATIONS IN ONTARIO

Construction Safety Association of Ontario

Electrical Utilities Safety Association

Forest Products Accident Prevention Association

Farm Safety Association

Health Care Occupational Health and Safety Association

Industrial Accident Prevention Association

Mines Accident Prevention Association of Ontario

Ontario Pulp and Paper Makers Safety Association

Transportation Safety Association of Ontario

These agencies provide workplace health and safety information to their respective industries in programs designed for both management and employees.

APPENDIX 3

LIST OF AGENCIES APPROACHED FOR CONSULTATION

Agency	Contact(s)	
Government of Canada		
- Transport Canada		**
- Ministry of Justice		**
- Labour Canada		**
- Health and Welfare Canada		
- Canadian Centre for Occupational Health and Safety	*	
Government of Ontario		
- Ministry of Health	*	
- Ministry of Consumer and Commercial Relations	*	
- Ministry of Labour	*	**
- Ministry of the Environment		**
- Ministry of the Solicitor General		
- Ministry of Transportation and Communications	*	**
- Ministry of Municipal Affairs and Housing		**
Metropolitan Toronto		
- Metro Licensing Commission	*	
- Metro Works Department		
- Metro Roads and Traffic Department	*	
- Metro Police Department		

City of Toronto

- City Solicitor		**
- Fire Department	*	
- Department of Public Works	*	
- Department of Buildings and Inspections		**
- Department of Planning and Development	*	**

* - Interviewed
** - Communication received

APPENDIX 4

LIST OF INDUSTRIAL ASSOCIATIONS AND COMPANIES INVITED TO COMMENT

- Board of Trade for Metropolitan Toronto **
- North-West Industrial Coordinating Committee
- Canadian Chemical Producers Association
- Canadian Manufacturers' Association **
- Canadian Manufacturers of Chemical Specialties Association **
- Gulf Canada

* - Interviewed
** - Communication received

APPENDIX 5

SYNOPSIS OF COMMENTS FROM INDUSTRIAL ASSOCIATIONS AND COMPANIES

THE CANADIAN MANUFACTURERS' ASSOCIATION

- The Association questions the need for such a by-law given the work underway at present on the WHMIS talks under Labour Canada.
- The Association is firmly convinced a municipal approach is inappropriate and would merely add an additional layer of rules to the existing maze.
- Such additional and unnecessary legislation would affect the international competitive nature of Canada's industry.
- The proper level for such right-to-know work is at the provincial and the federal levels of government, and the Association has been an active supporter of both the WHMIS work, and the Transportation of Dangerous Goods Act and Regulations.
- The Justice Committee of the Legislature has already considered giving the local administration powers over manufacturing, and decided that the municipalities should have no control or licencing powers in respect of manufacturing industries.
- The Association recommends that the Board of Health not proceed with such a by-law development.

CANADIAN MANUFACTURERS OF CHEMICAL SPECIALTIES ASSOCIATION

- Many of the Association members are located in the City of Toronto and would therefore experience a significant impact from the suggested by-law.
- Since the 'right-to-know' appears to be accepted as a given in the Jackson report, is it to be assumed that there is 'no right to privacy'.
- If the 'right-to-know' has been acepted by the Department of Public Health, then its initiation should be in the release of all Public Health Inspectors' reports on establishments, such as restaurants, as information for any group preparing to 'dine out'.

- The term 'Hazardous Substances' has not been defined in the Jackson report, precluding both the assessment of the impact on industry, and the assessment of the value of the initiative to the citizens of Toronto.

- Transport Canada, through the Transportation of Dangerous Goods Act, and Labour Canada, through the WHMIS discussions, are already addressing the practical aspects of the right-to-know. The delay in bringing down the finished product should serve as an indication of the complexities inherent in this work.

- The tax referred to by Jackson in order to pay for the program could have an economic impact on Toronto, and could act as a disincentive for industry to locate in Toronto, and perhaps justify movement to other locations.

- The use of specific chemical names would be of little benefit to the average citizen. The difficulty is that such terms as 'dioxin' would be not acceptable because it refers to approximately 78 different specific chemicals. The likelihood of misleading information being made available to the public is of great concern. However, competitors would benefit from such revelation, because the information would have valuable meaning to them.

- The Fire Department already has access to any information required by the Chief for fire prevention purposes.

THE BOARD OF TRADE OF METROPOLITAN TORONTO

Excerpt from a letter to Dr. A.S. Macpherson, Medical Officer of Health for the City of Toronto (July 10, 1984):

> "As you know The Board of Trade's membership of some 16,000 includes numerous businesses concerned about employees' health and safety, but in competition with their counterparts in other political jurisdictions.
>
> "This Board has therefore been observing the progress of a consultative process, relative to right-to-know concerns, launched in 1982, under the auspices of the Canadian Association of Administrators of Labour Legislation - Occupational Safety and Health, (CAAL-OSH). A Steering Committee composed of representatives of the Federal and Provincial governments as well as labour and industry are involved in developing a Canada-wide workplace hazardous monitoring information system

(WHMIS). Such a system will be fundamental to adequate right-to-know legislation.

"It is understood that excellent progress is being achieved in the negotiation of the system's details, by government, labour and industry and that the current objective is to submit a final report this fall.

"The Board of Trade perceives distinct social and economic advantages to the worker and the employer in the application of any safety and health regulations on a uniform country-wide basis, rather than through dissimilar local by-laws. Accordingly, and bearing in mind the substantial progress being made on the CAAL-OSH project, this Board would be opposed to the implementation of a right-to-know by-law by the City of Toronto as outlined in your letter. Further, we would recommend supporting and encouraging the participants in the WHMIS process as a positive step. Premature action at the municipal level might be counter-productive and, in fact, be a negative step.

"The Board will continue to monitor this matter and would be pleased to comment further as appropriate."

APPENDIX 6

LIST OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH GROUPS

Group

- Energy Probe *
- Ontario Public Interest Research Group **
- Riverdale Occupational Health Group **
- Toxics Coalition **
- Toronto Occupational Health Resource Committee **
- South Riverdale Community Health Centre **

** Communication Received * Interviewed

APPENDIX 7

SYNOPSIS OF COMMENTS FROM
ENVIRONMENTAL AND OCCUPATIONAL HEALTH GROUPS

ENERGY PROBE

- Energy Probe is in support of the concept of the right-to-know legislation as suggested by John Jackson.

- They are in support of a Statutory By-law to be in force across Ontario, enforced by each Medical Officer of Health. As a minimum, this legislation should provide the following:

  . right of entry

  . adequate enforcement provisions

  . registration provision for the substances identified as of concern

  . posting at the location of all hazardous substance handlers

  . provision for the Medical Officer of Health to post a hazard warning where the operator refuses to do so

  . a telephone referral number where citizens could get more specific information from the records of the Medical Officer of Health on substances and chemicals at a given location

  . provision for the information on the location and the quantity of the listed hazards, either from a responsible person always available in time of emergency, or responsible to provide the information to the Medical Officer of Health for use by the Fire Department in particular. (This is necessary because other dangerous substances, which may in themselves not be explosive or inflammable, may become exposed and dangerous in the fire).

Energy Probe wishes radioactive substances included on the list drawn up by the Medical Officer of Health. There would appear to be no legal restriction to this because there is no effort to regulate the use or the storage of the radioactive material under

the suggested by-law. Therefore, federal authority in these matters would not be challenged.

The substances to be included on the list should consist at least of those currently regulated for environmental and occupational exposure under current federal and provincial law. Reference should also be made to lists such as those published by agencies like the Environmental Protection Agency in the United States. In addition, any substance or chemicals of concern to City Council should be included.

ONTARIO PUBLIC INTEREST RESEARCH GROUP

- The need for such legislation in Toronto is great, as a practical preventive health measure and from a philosophical perspective.

- If the disclosure laws existed, the process of determining cause-and-effect relationships would be greatly facilitated and they might help to resolve the conflicting information on low-level exposure to hazardous materials.

- The OPIRG supports the implementation plan identified by John Jackson.

TOXICS COALITION

- Neither the natural environment nor the human body have had sufficient time to evolve defence mechanisms capable of coping with the threats posed by these newly developed toxic substances.

- The claim that industry has an unquestioned "right" to protect trade secrets clashes directly with what many people would consider to be an equally valid "right" - the right of the individual to be as fully informed as possible regarding dangers and hazards encountered during the course of day to day life.

- There is both inadequacy in the legislation and in the failure to enforce fully that which does exist.

- They appear to hold that foods also should be considered as having toxic potential, particularly from pesticide residue and additives.

- They support the by-law suggestion including:

hazardous substances emitted into the air, water and land

hazardous substances found on the premises as defined by the Board of Health

requiring amendments to be made by the premises operators when additional materials are received

municipal staff (fire, health, buildings) should have verification authority

information gathered is to be available to any citizen on request

- The Board of Health should explore its powers under the Health Protection and Promotion Act to find means of liaising with all concerned parties with the information they feel can be gathered and disseminated under these legislations.

- The Department of Public Health should provide a research facility for the preparation of information on hazardous substances.

- Hazardous substances are essentially of local concern and therefore the municipality should play a leading role.

RIVERDALE OCCUPATIONAL HEALTH GROUP

- Experience shows that workers should not have to depend upon the competence or the goodwill of their employers for their knowledge of occupational health hazards.

- Workers must be informed of the materials they are working with, and they must have a neutral source of information regarding the health hazards associated with these materials.

- They see the municipal right-to-know by-law as a vital tool to the medical profession trying to serve their patients and community competently.

- They support the municipal by-law proposal.

APPENDIX 8

SELECTED SYNOPSIS OF CONTRIBUTED COMMENTS FROM MUNICIPAL SERVICES NOT INCLUDED IN THE BODY OF THE REPORT (SECTIONS 2 & 3)

FIRE DEPARTMENT

- The Toronto Fire Department does not support a by-law for the City of Toronto.

- The Toronto Fire Department has carried out a 1 1/2 year pilot project wherein industry and the Department have cooperatively labelled the buildings of major interest to the fire fighters. There has been excellent cooperation, and no refusals have yet been experienced. It is their opinion that one of the major reasons for the program's success has been the confidentiality inherent in the arrangements.

DEPARTMENT OF PUBLIC WORKS

- Security problems would increase because the public availability of such information where relatively large quantities of hazardous chemicals and substances could be found could lead to sabotage or threats which would not otherwise have been within the easily procured range of the perpetrator.

- Certain Civic employees, such as sanitation and sewage maintenance personnel could not be reasonably told of hazards, given the inability to determine the specific contents of garbage or sewage at any particular time. Nevertheless, precautions have already been placed into effect for certain areas of the sewage system.

- The Department sees the provincial approach to the right-to-know as the most effective to attain the ends desired in the Jackson report.

- The intention and the true value of the placarding of trucks is to assist the emergency response personnel in the event of an accident.

- The Jackson report does not recognize that in the City of Toronto there never was an industrial park system, and that in most instances industry preceded housing.

- The emphasis should be to ensure an individual employee's right to obtain specific information from his/her employer on

materials he/she may work with rather than in obtaining any public disclosure of this same information.

DEPARTMENT OF PLANNING AND DEVELOPMENT

- The suggested by-law could place the City of Toronto at a disadvantage in development by discouraging new industrial growth, and by encouraging existing industries using dangerous materials, as defined, to leave the City.

- The principal benefit from further development of the right-to-know should be for the emergency response services, such as police and fire.

- The provincial approach should be taken in this matter and the Province encouraged to take a lead role in its development.

- There should be renewed efforts made to obtain provincial cooperation in sharing information presently available with the Ministries of the Crown.

- A confidentiality clause should be sought for the Health Protection and Promotion Act to encourage the release of such information, as above, to the Medical Officer of Health as he/she may require.

- The Minister of Municipal Affairs and Housing should be encouraged to proceed with the development of a Municipal Licencing Act.

- There would be great expense involved in the administration of such a by-law, with little benefit to the health and safety of Toronto citizens. The anxiety level would be increased rather than being lowered.

- A City-wide committee of potentially involved agencies should be formed to examine the implications of such legislation for the City of Toronto, if City Council were of the opinion that a by-law was an appropriate legal approach.

- The Department supports the rapid implementation of information programs, and the labelling and placarding requirements in the existing provincial proposals. (see MTC).

- It is very unlikely that the enabling legislation for such a by-law would be successful in the existing circumstances.

- Certain traffic controls can be implemented by the municipality at present, but these are based on the nature of the vehicles rather than upon their cargos.

DEPARTMENT OF BUILDINGS AND INSPECTIONS

- The Department does not see itself involved in the issue of the right-to-know as indicated in John Jackson's work.

- The Fire Code, as revised, now covers the storage, use and handling of hazardous substances which are inflammable or explosive, and is enforced by the Fire Department.

METROPOLITAN TORONTO ROADS AND TRAFFIC DEPARTMENT

- The Roads and Traffic Department sees transportation controls on hazardous substances as being aimed at public safety rather than at health concerns. Therefore, they feel that the public will be better served by knowing of the specific hazards of a particular load in transit than in having detailed information about the contents. This is best achieved through clear and accurate placards and signs on the vehicles, as are being proposed by the Dangerous Goods Transportation Act, 1981.

- The municipal knowledge of truck contents would be useful to the Roads and Traffic Department in their planning and selection work regarding restrictive truck routes. It would permit a greater use of permissive routing systems rather than a prohibitive one which is costlier to administer (i.e. police, signage, by-law preparation for each affected street, etc.).

- The knowledge of specifics in transit or in storage could be perverted to terrorist acts or threats much more readily than if the specifics were not public. Only the hazards should be noted.

- The Roads and Traffic Department supports the concept of the employees' right-to-know, but wish their reservation regarding the community aspect of this concept as noted in John Jackson's report to be recorded. The community would be best served by knowledge of the hazards, and such systems are currently under development by the provincial and federal governments.

APPENDIX 9

COMMENTS OFFERED BY LABOUR ORGANIZATIONS AND GROUPS

CANADIAN UNION OF PUBLIC EMPLOYEES

- CUPE heartily supports the philosophy of the right-to-know in the broadest sense, as noted in John Jackson's report.

- The union feels that while the ultimate approach to the right-to-know would be federal, it appears to be necessary to begin at the local level with a municipal by-law in order to bring the provincial and federal governments to the required consciousness of the demand for such information. If one such by-law were to be developed, it would lead to similar demand in other municipalities, and create the ripples necessary to achieve the ultimate federal and provincial end.

- There are three main reasons for the current lack of information available to workers from their employers:

  a) some employers regard such information as an infringement of their personal or business rights:

  b) some employers simply won't advance the information on their own initiative, but will offer what they do have when pressed to do so, requiring worker initiative to obtain the information: and

  c) some employers don't know the materials, either because of trade names, or the difficulty in obtaining the necessary specific information from their suppliers, but otherwise would be willing to offer the information.

- Trade secrets are very suspect as a rationale for failing to provide the information because modern analytical methods can determine both quantity and ingredient components of products. If a trade secret is felt to be a critical matter to a manufacturer, it should be validated to be so by some form of health and safety commission with equal representation on it from labour and management, with an independent chair. Any health effects from such processes would still have to be made available to the workers.

APPENDIX 10

SYNOPSIS OF RESPONSES FROM FEDERAL DEPARTMENTS

LABOUR CANADA

The right-to-know of hazardous substances is a subject Labour Canada has been working on for some time.

- The Department of Labour has undertaken a major initiative involving a consultation process with industry, labour and provincial governments known as the Workplace Hazardous Material Information System.

- "WHMIS is being developed to provide users of hazardous chemicals (employers and workers) with information about the hazardous properties and detrimental health effects of individual chemical products, as well as information about controls and proper procedures needed in the workplace. The concept of the system involves labelling of containers, identification of hazardous chemicals in the workplace, provision and use of Material Safety Data Sheets and education of workers about the particular chemicals they use in their jobs. Criteria for the identification and classification of hazardous materials to be identified in the System, are being worked out. The intent of the exercise is to establish effective communication between suppliers of hazardous industrial chemical products and the downstream users, their customers, to ensure the health and safety of workers who manufacture or use these products."

- "The project involves a steering committee and several working groups. It began in mid-1982. Representation from industry includes major chemical and petrochemical producers associations and major companies who are producing industrial chemicals or using them in their operations. Most occupational health and safety regulatory agencies are represented as well as Health and Welfare Canada, Consumer and Corporate Affairs, Environment Canada and Transport Canada. Labour interests are represented by the Canadian Labour Congress and its affiliated unions."

- "The objective of (their) efforts, is to recommend a uniform national system for communicating information on potentially hazardous chemical products, to federal and provincial deputy ministers of labour later this year (1984). Regulations in federal and provincial jurisdictions, reflecting the minimum

acceptable performance expected of suppliers and employees, should follow in due course."

TRANSPORT CANADA

- "The Transport of Dangerous Goods Directorate of Transport Canada is responsible for the development of regulations under the Transport of Dangerous Goods Act (TDG Act)."

- "Substances controlled under this Act must be labelled, placarded and documented. In all these functions, the prime aim is to provide readily interpreted information on potential hazards."

- "The classes of dangerous goods which (they) regulate are the international (U.N.) classes, namely: explosives, compressed gasses, flammable liquids, spontaneously combustible substances, oxidizers, toxic or infectious substances, radioactive materials, corrosive substances and environmental hazards, wastes, and a few miscellaneous items. All have distinctive colours and symbols designed for public recognition."

- "Similarly, the back-up services available within Transport Canada are available to the public. CANUTEC's hazardous chemicals guide is distributed to emergency response services (e.g., Fire Chiefs) and can be purchased by others."

- The development of a centralized accident data base specific to dangerous goods transportation started in earnest in late 1979. The response was in two forms of reporting; the Dangerous Occurrence Report and the Dangerous Goods Incident Report. The former outlines, in detail, the information needed to trace the events leading up to the accident, the outcome and what remedial measures were successful in effectively responding to the incident without casualty. The latter described conditions which may threaten the safe transport of dangerous goods.

CANADIAN CENTRE FOR OCCUPATIONAL HEALTH AND SAFETY

- The Centre has been working together with the WHMIS group in this project for some time as an active participant. It is anticipated that if the work continues in its present successful direction, most, if not all of the workplace labelling and information concerns in John Jackson's report would be addressed.

- The education aspect, both for the worker and the employers, in the handling of hazardous substances is regarded by the Centre as being a key element of importance now accepted in the WHMIS work to date.

- The current Ontario Occupational Health and Safety Act is somewhat behind a number of other provinces (Quebec and Saskatchewan) in requiring an inventory to be on the premises, detailing the hazardous substances kept and handled at the workplace. As noted above, this is expected to be overcome when the WHMIS proposals are adopted.

- The Centre sees the Occupational Safety and Health Administration's (United States) standards being adopted by Canada, either directly through legislation, or by the importation of the large volume of American materials into Canada.

- In a similar theme to the above, the normal market forces will have an influence on the labelling and data sheet information, regardless of what legislation is actually imposed, largely because of the North American economy we are in. This is particularly the case now that the United States is formally requiring items such as product data sheets to be prepared.

- The majority of the municipal right-to-know by-laws in the United States lacked either the real intent or the capacity for enforcement, but were largely meant to be the spearhead for state and federal legislation on the same subjects.

- The multiplicity of such by-laws in the United States led to the demand by industry that some comprehensive and standardized system be developed at a national level to allow compliance to be attained realistically by manufacturers. In this sense the local by-laws served their purpose.

- The labelling of substances is currently being considered for inclusion in the federal Products Act.

- The Centre did not wish to express any view on the matter of the general community access to the same information on the workplace substances as may be available at present or in the

future to the workers. It was considered to be outside of their interest and purview.

APPENDIX 11

SYNOPSIS OF OBJECTIONS AND CONCERNS RESPECTING
A TORONTO BY-LAW ON THE RIGHT-TO-KNOW

- There will likely be an increase in security problems when accurate information about the locations and specifics of hazards become available to those who wish to terrorize or threaten for reasons best known to themselves. Without such disclosure, these acts are less likely because the perpetrators must do too much work on their own to discover the information necessary to give validity to their threats.

- All such additional restrictive regulations decrease the ability of Canadian industry to compete in the international markets of the world.

- The necessary background work toward the development of a proper and complete right-to-know approach is already underway at the appropriate levels of government and industry through the WHMIS meetings and the Transportation of Dangerous Goods Act work. Good federal and provincial cooperation has already been demonstrated in these areas.

- A right-to-know by-law for Toronto would place the City at a disadvantage in attracting industry since it is unlikely that other municipalities would pass similar by-laws, and therefore would be the sites selected by new or expanding industries. This would have a negative impact on the economic base of the City of Toronto.

- The Justice Committee of the Legislature has already considered the role of the municipalities in controlling the manufacturers within their boundaries, and the decision was reached that such municipal control was inappropriate.

- There should be an emphasis placed upon the workers' rights, rather than some form of generalized approach, and therefore the Ministry of Labour is the appropriate agency to lobby for improvements in this regard.

- The administration of such a by-law would be very expensive, and have relatively little ultimate impact upon the health or the safety of the citizens of Toronto.

- The Fire Code is already in existence and has proven itself to be effective for the purpose of information to the emergency workers through its enforcement under the Fire Chief.

- All information assembled by the Public Health Inspectors in establishments currently under inspection should be released as an example of the Department's belief in the right-to-know.

- Only competitors would receive any benefit from the chemical specifics, while the average citizen is unlikely to gain any meaningful protection from the knowledge.

- There is an increased danger of vandalism and highjacking from the uncontrolled public disclosure of contents of vehicles.

- A by-law of such a nature could run counter to United States/Canada reciprocity agreements complicating the already difficult regulations.